



MOCAP

**Measuring performance of cloud-based
platform for interactive TV services delivery**

Uros Zizek

CEO at CASTOOLA

FEC3

Paris, March 14-16, 2018



Castoola Platform is cloud-based platform for serving of interactive TV services based on HbbTV (“Hybrid broadcast-broadband TV”) technology.

WHAT IS CASTOOLA PLATFORM?

Background & motivation

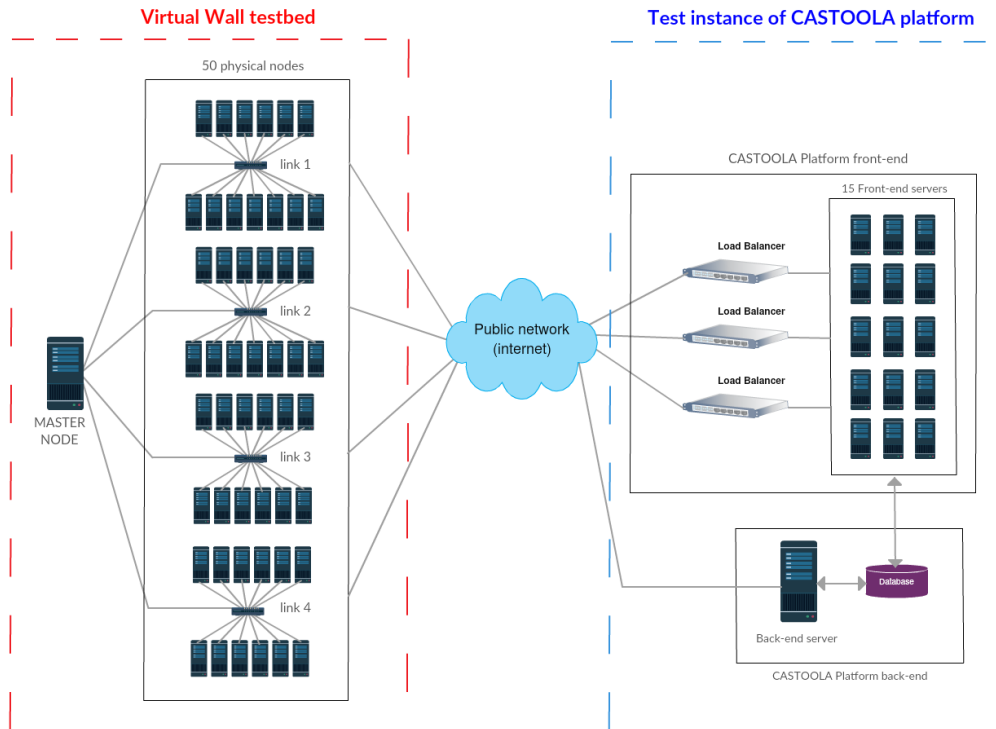
- hard to test our platform in a **real large-scale environment** with a guarantee that existing end-users would not experience any bad side-effects
- always keen to **improve** our product and deliver highest possible quality of service
- obtain **useful information** about the bottlenecks and plan future upgrades

Concept & objectives

- to simulate high number of end-user requests from the Virtual Wall testbed to the test instance of our platform
- to define and prepare 15 different test scenarios,
- to execute the experiment on each test scenario on multiple different ranges of number of end-user requests:
 - up to 1.000 end-users
 - up to 5.000 end-users
 - up to 10.000 end-users
 - up to 100.000 end-users
 - up to 500.000 end-users
 - up to 2.000.000 end-users

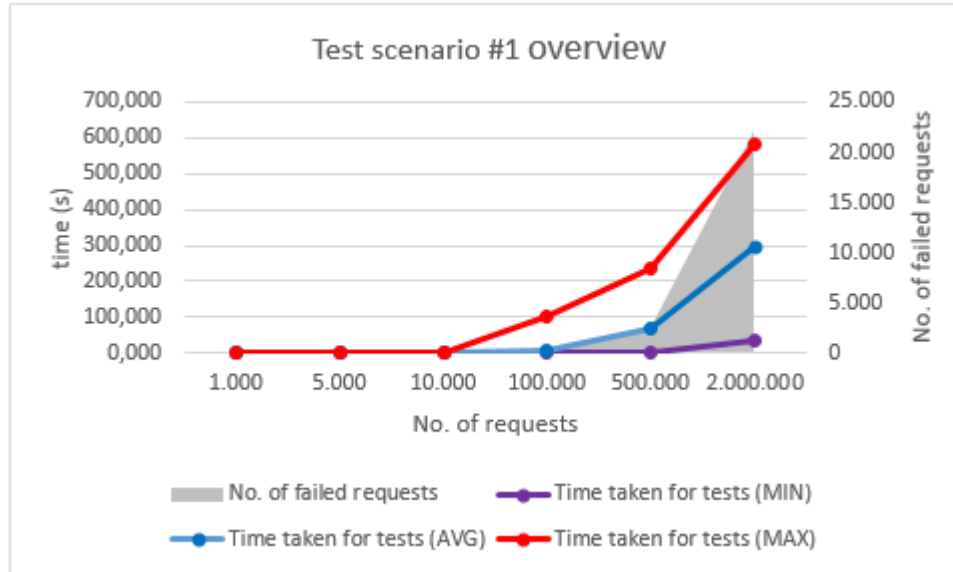
Set-up of the experiment

- Test instance of Castoola Platform in the cloud (DigitalOcean)
- Virtual Wall testbed (1 master node, 50 testing nodes)



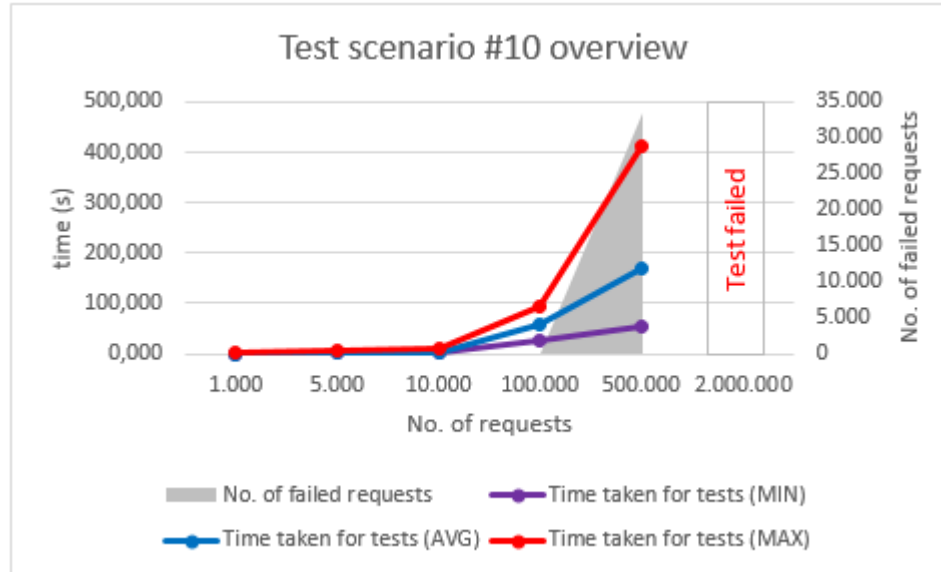
Results (1/3)

Example of the result on the front-end part of the platform



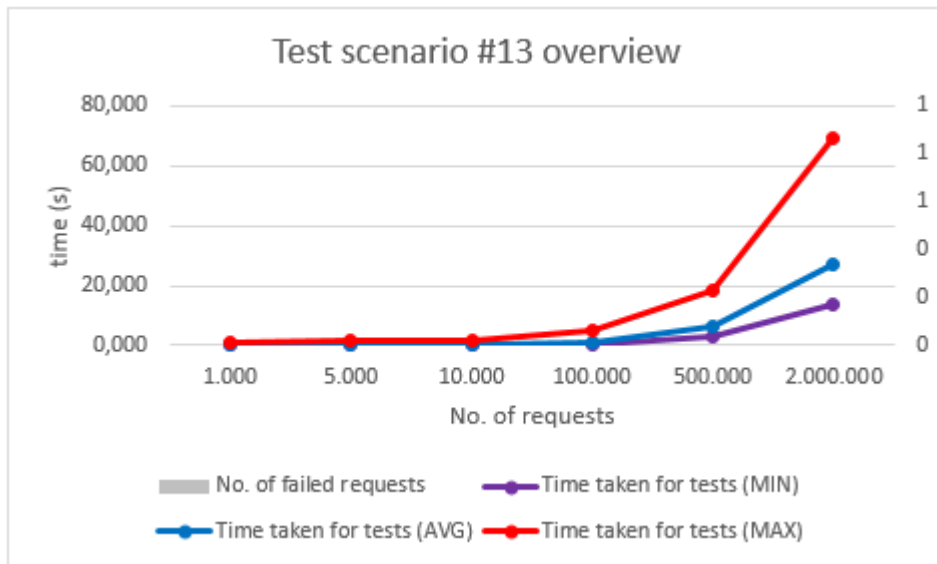
Results (2/3)

Example of the result on the back-end part of the platform (complex operation)



Results (3/3)

Example of the result on the back-end part of the platform (static cached file)



Business impact (1/4)

- To eliminate bottlenecks
- To higher up the boundaries of maximum number of end-users
- Scalability of cloud-based platform
- Provide best possible quality of service (QoS)

- Positive impact on pricing model (cost per end-user now possible)
- Market reach (premium clients)

Business impact (2/4)

Observations:

- Overall satisfied with the results
- Back-end part of the platform needs improvement

Action:

- Future development activities to be planned based on the results of this experiment

Business impact (3/4)



Value perceived:

- gained knowledge on topics of automated testing and experimentation, cloud-based solutions scalability and optimization, private and public networking in practice
- practical experience on preparation and execution of the experiment based on Fed4Fire+ facilities and testbeds;
- obtaining useful information about the performance and bottlenecks of our cloud-based platform.

Business impact (4/4)

Direct value:

- Identifying of issues and bottlenecks
- Future development activities to be planned based on results of this experiment

Indirect value:

- Obtain useful information about latest trends of testing and experimenting
- Knowledge extendable to other industries and fields

Feedback (1/4)

Testbed used:

- **Virtual Wall**

We used 51 (1 controlling + 50 testing) physical nodes, connected to each other and reachable through public network

Worked very well!

Tools used:

- **Fed4FIRE portal** (We used the documentation part of the portal, which was very useful for us. Everything worked well, we've just been missing some more practical tutorials.)
- **JFed** (Our experience with jFed tool is very good, it has been working perfectly in our case)

Feedback (2/4)

For us, the most valuable components of the federation are:

1. resources and testbeds available (we could not get so much resources for free anywhere else)
2. technical support (guidance by the patron all from the start to the end)
3. technical documentation that comes together with the testbed

Feedback (3/4)

Testbed performance

- Testbed (nodes on the Virtual Wall) performed above our expectations
- Number of resources available was large enough – could get even more if needed
- Had no issues with reservation of nodes & time planning
- Environment was trustoworthy

Feedback (4/4)

What we also liked:

- Everything in Fed4FIRE+ is well organized
- Not too much of administration, so we could focus on practical work
- Fed4FIRE+ enabled us what no-one else could (as far as we recognized)
- We meet other experimenters & interesting projects



Co-funded by the
European Union



Co-funded by the
Swiss Confederation

This project has received funding from the European Union's Horizon 2020 research and innovation programme, which is co-funded by the European Commission and the Swiss State Secretariat for Education, Research and Innovation, under grant agreement No 732638.

WWW.FED4FIRE.EU