AN OPEN SOURCE MPEG DASH EVALUATION SUITE

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ABSTRACT

In this paper we demonstrate our MPEG-DASH evaluation suite, which comprises several components on the client side as well as on the server side. The major client components are the VLC DASH plugin, libDASH, and DASH-JS, a JavaScript-based DASH client. These tools enable performance tests on various platforms, e.g., Windows and Linux as well as mobile platforms such as Android. Moreover, due to their flexible structure it is possible to integrate adaptation logics and evaluate them under consistent conditions. On the server side we provide the content generation tool DASHEncoder, our MPEG-DASH datasets well as the MPEG-DASH conformance validator.

Index Terms— MPEG DASH, Open Source, Demo

1. INTRODUCTION

Dynamic Adaptive Streaming over HTTP (DASH) [1] enables the adaptive (e.g., bitrate, resolution, etc.) delivery of multimedia on top of HTTP by utilizing a chunk based streaming approach. Additionally, MPEG has recently standardized this streaming approach and ratified it as international standard, which is now public available. Our evaluation suite comprises various tools that simplify the evaluation and comparison of different DASH-based streaming techniques.

2. MPEG-DASH EVALUATION SUITE

This section briefly describes our MPEG-DASH evaluation suite, which consists of several components. On the client side we provide libDASH, which is the official client reference implementation of the MPEG-DASH standard, as well as the MPEG-DASH plugin for the VLC media player that is also available on Android smartphones as VLC provides a mobile version. These components offer various simple built-in adaptation logics and can be easily extended with more sophisticated adaptation logics, like shown in our previous work, where we have used these tools to evaluate adaptation logics in practical situations, e.g., under vehicular mobility [2]. Moreover, our improved adaptation logics outperform existing industry solutions for adaptive HTTP streaming like shown in [3]. Additionally, [3] also shows the integration of Scalable Video Coding (SVC) into MPEG-DASH as well as a performance comparison to MPEG-DASH based on H.264/AVC.

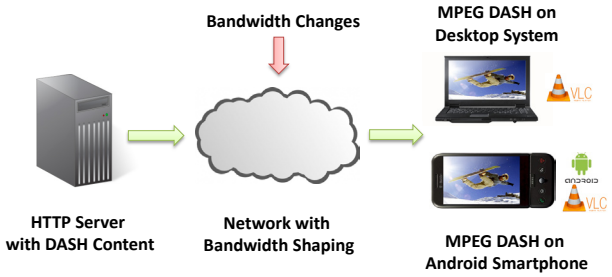

Figure 1: Demo Setup.

Furthermore, we provide several server side tools such as the MPEG-DASH dataset, consisting of different movie sequences available in different segment lengths as well as bitrates and resolutions. This dataset has been encoded using our DASHEncoder tool, which is a wrapper tool for x264 and MP4Box and open source available, such as all other tools at [4].

3. DEMONSTRATION SETUP

The demonstration setup is depicted in Figure 1, consisting of one server and two clients, i.e., mobile and desktop connected over a controlled network. These clients download our MPEG-DASH dataset content from the server node, which is hosting a conventional Apache HTTP Web server. Furthermore, we provide a network emulation node, which is able to shape the available bandwidth for the clients according to a given user input based on a slider control. Due to this bandwidth manipulation and a download performance plot at the client, it is possible to demonstrate the functionality of our adaption algorithms in an intuitive and informative way.

4. REFERENCES

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