AMWA
Networked Media. Working.

Networked Media at the AMWA

AMWA Labs
April 2017 Update

What has been achieved so far?

The following list, first outlined at a project review meeting on 30th & 31st March 2017, describes the highlights of the first phase:-

- Testing of the Joint Task Force on Networked Media Reference Architecture in the context of implementation choices that are different from existing approaches, especially those that fit well with software-only and cloud-fit implementation.
- Comparison of different approaches to scaling IP streams achievable in push and pull models, and how to mix them.
- Demonstration of RTP to HTTPS to RTP gateways, allowing transport streams to be securely transported over wide area networks - including from cloud data centres - and securely consumed "in the middle" by HTTPS clients.
- Presentation of measurements that show how TCP protocols with appropriate settings can be used to fill 10Gbps network pipes.
- Demonstration of transporting 1080i 50 uncompressed streams in real time using out-of-the-box Javascript HTTP and securely with Javascript HTTPS on a LAN, all with NMOS registration and discovery. HTTPS did not add a substantial performance overhead.
- Discussion of how to encode multiple streams of media without accidentally roasting chickens on the server rack - what codecs for professional media are fit for CPU, GPU or FPGA acceleration?
- Demonstration of media transformation (blur, flip, flop, etc.) using WebGL and shaders to exploit the capabilities of GPU acceleration, efficiently replacing live video mix with efficient software equivalents.
- Explanation and discussion of the automated provisioning, deployment and execution of dynamic software infrastructure using an orchestrated API approach.
- A proposal for creating a cloud-based registration service based on JT-NM models that, like the Amazon IoT, use public key infrastructure to enable Internet-facing device registration, discovery and control.

An Overview - What is the AMWA Labs initiative?

The AMWA Labs initiative has been set up to complement the existing Networked Media Incubator project.

Initially, it has explored a "cloud-fit" approach to Networked Media, employing data centre and streaming technologies.

This initiative provides a learning opportunity and an unconstrained environment to consider how Discovery, Transport and Compression will work, while taking into consideration Security for media content from the beginning and throughout the entire production and distribution process.

The output of this short exploratory project provides valuable input to the Networked Media Incubator project which concentrates on practical implementations and the development of the Networked Media Open Specifications (NMOS).

The AMWA Labs team have shared their thinking and request comment from AMWA members via the AMWA Basecamp.

Drawing input from both end users and their suppliers, our goal for both the Networked Media Incubator project and AMWA Labs initiative is to further expand the NMOS toolbox to satisfy the rapidly evolving business needs of the media industry.

The AMWA is delighted to be a participant in the Joint Task force on Networked Media (JT-NM) and to be working closely with other trade associations to provide a joined-up approach to the development of IP based systems.

For further information on the Networked Media Open Specifications, www.NMOS.tv

To enquire about participation in the AMWA's IP based projects, Neil.Dunstan@AMWA.tv

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