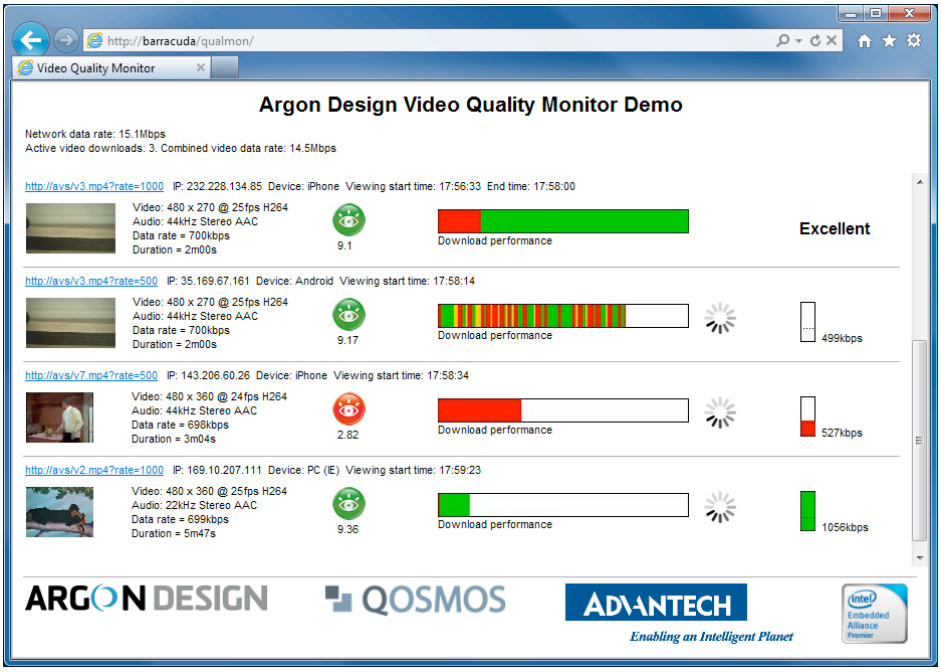
qualmon - Video Quality Monitor

qualmon is an example application to analyse the delivery and quality of video content being transmitted across a network. Argon Design has worked with Advantech and Qosmos to demonstrate this capability running in real time on their FWA-6510 Network Server.



Why?

There has been an explosion of video traffic across both fixed and mobile networks, increasing levels of bandwidth per user. Service providers need the ability to tune their networks effectively to ensure sufficient bandwidth and to control the Policy Charging Enforcement Function, an essential part of next generation networks.

How?

Argon Design have taken the Qosmos ixEngine Deep Packet Inspection (DPI) and Network Intelligence Software Development Kit and developed an application to identify, extract and analyse video content in a network stream. The demo application has been prepared to review both the quality of service to the customer and measure the video's "visual quality":

Quality of Service/Experience

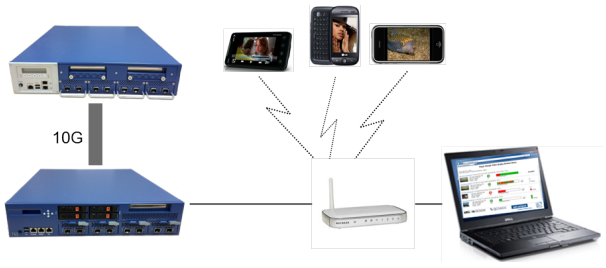
- recognise video streams,
- extract details of the streams from the container format,
- extract a representative thumbnail,
- recognise the player in use & replicate its buffering model,
- simulate the player & display the buffer margin as a time graph,
- predict video freeze when the player is starved of data.

Visual Quality

- decode the video,
- perform image processing to assess visual quality and provide a numeric quality score.

Hardware

Argon Design uses an Advantech FWA-6500 as a video server that streams videos at different rates to simulate network constraints and as a Packet Generator streaming canned internet traffic. This is connected via a 10G link through an FWA-6510 network server to a WiFi hub to emulate the wireless network; users access the server and stream videos on their mobile devices, while Advantech's FWA-6510 Network Server performs DPI on the network stream in real time.



Advantech's FWA-6510 extracts and analyses the video streams to provide packet details and create an identifying thumbnail, whilst calculating how much viewing time is buffered in the player and performing image quality analysis. It also creates a video MOS quality score. Results are then served to a web page for viewing on the browser and updated continuously.

ARGON DESIGN

About us

Argon Design provides all aspects of high technology product design and development for clients ranging from entrepreneurial startups to established multinational organisations. We are an exceptionally focussed engineering team with extensive expertise in solving difficult design problems.

We take a holistic approach to product design, working closely with our clients to provide elegant solutions to challenging technical problems involving:

- high performance video, imaging & multimedia applications,
- signal processing,
- deep packet inspection & network intelligence.

Argon Design's technical team is made up of multi-disciplined, talented engineers, with experience across a wide range of system architectures and an impressive track record of both technical and commercial success.
Our aim is to reduce time to market, risk and development costs for our customers, whilst delivering market leading solutions.

Focus Areas

Our focus is on manycore/multicore embedded systems, embedded imaging /multimedia and Network Intelligence

Multicore/Manycore Embedded Design

- Argon Design is focussed on "difficult to do" designs and the use of innovative technologies to address problems in high-performance imaging & multimedia, signal and parallel processing.

Embedded Multimedia Design

- Argon Design has many year's experience in mobile multimedia design with a strong focus on high level 2D/3D graphics performance and full HD video encoding & decoding for mobile devices. We also have extensive imaging knowledge and experience for both video and still image capture.

Network Intelligence, DPI

Qed
Deeper Expertise

- Argon Design is a member of Qosmos's QED Program aiming at making it easier to embed their market leading Network Intelligence Technology to enable deep visibility into traffic flows.
- Argon Design's technical team is particularly strong in multimedia applications and is working closely with Qosmos on enabling their ixEngine DPI/Network Intelligence software in image/video analysis and other applications, such as mobile traffic optimisation.

See Qualmon at MWC - 2G38

An example of Argon Design's capabilities is the Qualmon demo (see overleaf) which shows: real time deep packet inspection; video decode; and complex video analysis running on high performance network appliances developed by Advantech. These are based on the latest Intel® Xeon® series multicore processors.

ADVANTECH
Enabling an Intelligent Planet

This demo application can readily be extended to meet specific client requirements.

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