qoe

The Linux tool to monitor perceived video quality, perceived audio quality and loudness.

Product information

Product

☑ Linux software
☐ Windows software [1]

Video quality metrics

☑ No reference
☐ Parametric
☐ Hybrid

Audio quality metrics

☑ No reference
☑ Loudness (according to recommendations ITU BS 1770-2 and EBU R128)
☐ Decodability

Input types

☑ File
☑ IP streaming [2]
☐ Capture card/device
☐ Desktop capture

Input formats

☑ HEVC (H.265)
☑ MPEG-4/AVC (H.264)
☑ MPEG-2
☑ Uncompressed [3]
☑ Other encoded formats [4]

Applications

☑ Live monitoring [2]
☑ Jerkiness monitoring
☑ Loudness monitoring
☑ Optimal bitrate determination [4]
☑ Video encoders and cameras benchmarking and comparison [4]
☑ Video processing optimization [4]

[1] For Windows, see our other product "Multi Audio Video Monitor"

[2] For video monitoring, also see our other product Video Quality Monitor

[3] Uncompressed video must be the result of HEVC, H.264 or MPEG-2 decoding

[4] Also see our other product Video Quality Analyzer
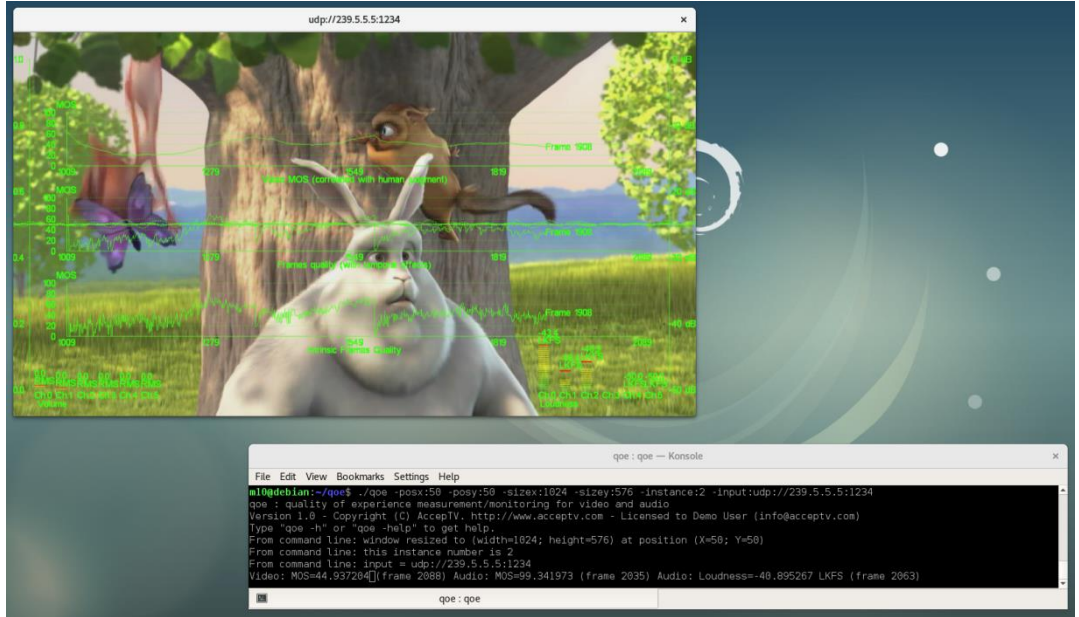
Providing multiple audio/video TV channels/services to your customers requires monitoring multiple audio/video sources in parallel.

To permit the monitoring of multiple audio video sources in parallel and on a single machine, **qoe** is here.

qoe is a powerful software solution to measure and monitor video quality as perceived by end-users. **qoe** can also measure and monitor audio quality and audio loudness.

qoe computes video quality using a MOS (Mean Opinion Score) scale ranging from 0 to 100.

qoe is a very useful tool to:

- **measure and monitor in real time the quality** of **IP streaming** audio/video services, like TV channels,

- measure and monitor the quality of **audio/video files**,

- measure and monitor **audio loudness according to international recommendations ITU BS 1770-2 and EBU R128**,

- **measure the impact on perceived quality of unwanted pauses (due to rebuffering)** during video playing,

- **build video walls** / mosaics.

And since **qoe** does not depend on specific hardware, you can install it on any Linux PC. You can even run it on a laptop!

Based on an elaborate human vision model, Video Quality Monitor quickly provides accurate, detailed and repeatable measurements. **qoe** includes different video quality measurement technologies ("metrics").

The **No Reference metrics** compute video quality by exploring the decoded frames at pixel level..

Each metric computes codec-specific artifacts:

- The **No Reference MPEG-2 metric** measures blockiness visibility and blur perception,

- The **No Reference H.264 metric** measures blockiness visibility, blur perception and objects contrast,

- The **No Reference HEVC metric** measures blur perception and picture flatness,

qoe also enables:

- **monitor several services** on a single PC,

- **receive alerts by email and SNMP** when problems happen,

- **save video samples** when problems happen.

Key features

Perceived video quality measurement and bitrate measurement

qoe measures the perceived video quality on a scale from 0 to 100. It also measures the bitrate of any frame (instant bitrate) and the mean bitrate.

Integrated web server and database

qoe saves all measured data in an integrated database and includes its own web server so you can remotely:

- consult the results from the database
- get monitoring statistics between two dates and times
- generate quantitative and detailed quality analysis reports
- export results in CSV files
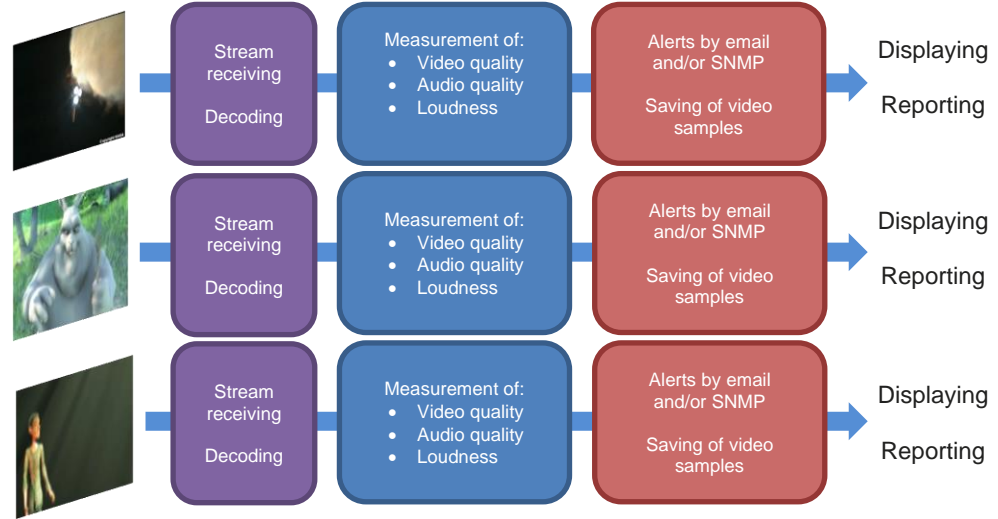
Loudness and audio quality measurement

qoe enables to measure and monitor audio quality, audio bitrate and loudness according to international recommendations ITU BS 1770 and EBU R128.

Many other features

qoe also includes many other features like automation features, command line usage, reports generation, etc.

Ask for a free evaluation version now!

Principle

Monitored TV channels or audio/video services

Stream receiving / Decoding → Measurement of: Video quality, Audio quality, Loudness → Alerts by email and/or SNMP / Saving of video samples → Displaying / Reporting

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Features

Input

Compatible with all common codecs: HEVC, H.264, MPEG-2, VP9, … and also with uncompressed YUV (4:2:0, 4:2:2, 4:4:4)
Compatible with the most common containers (TS, AVI, MP4 …) and with raw data
Compatible with all resolutions: SD, 720p, 1080i, 1080p, 4K, custom…
Compatible with all frame rates: 4:3, 16:9, 1.85, 2.21, 2.35, custom…
Compatible with all durations from 5 seconds to several hours
Compatible with CBR and VBR encoding
Compatible with all audio sampling rates (loudness measurement adapts itself to the sampling rate)

Input source
File
Streaming video (UDP, RTP, HTTP, HLS)

Measurement
Elaborate Human Vision modeling
Video quality measurement: measurement of blockiness, blur, contrast, jerkiness, computation of MOS (Mean Opinion Score) indicating the quality of the tested video
Impact of image freezing (due to rebuffering) on perceived video quality
Audio quality measurement: errors detection (silence, important distortions, signal breaks)
Loudness measurement in accordance with recommendations ITU BS 1770-2 and EBU R128
Instant audio and video bitrates measurement (for each frame)

Results
Curves and values of MOS, bitrate, blockiness, blur, contrast, jerkiness, loudness
Useful interface: measured video, video quality curves, video bitrate curve, measured audio waveform, audio quality curve, audio loudness curves, audio bitrate curve, magnifying glass
Monitoring statistics and curves between two user-defined dates (with one-minute granularity)
Automatic reports generation (TXT, CSV, HTML)
Alerts (email, SNMP traps) if quality is too low or if decoded frames number or audio samples number are incorrect
Video samples when problems happen (saved from a few frames before the problem so you see the problem appearing in the video sample)

Extra
Integrated HTTP server for distant results consultation and built-in database to store results
Possible command line usage (with many available arguments)
Possible sending of commands to **qoe** while it is running (by calling URLs from the HTTP server)
Can process several files or streams in parallel (designed to build video walls / mosaics)

AccepTV
172 route de Saint Joseph
44300 NANTES
FRANCE

AccepTV
Perceived Video Quality Metrics

www.acceptv.com

info@acceptv.com