TestDevLab

Video Call Reliability and Quality Review

2-User Desktop

This scope aims to provide a thorough evaluation of your application's resilience and adaptability. By conducting these tests, we help you:

- Identify potential weaknesses under adverse network conditions.
- Optimize performance for a wider range of user environments.
- Enhance overall user experience by ensuring consistent call quality.

Our goal is to equip you with actionable insights to improve your application, ensuring it meets the highest standards of reliability and quality.

Non-Functional Tests

Test information

Platform:

Single platform (Windows or Mac)

Network limitations:

The network is limited on one of the devices for incoming and outgoing network. The performance is measured on device that is being throttled.

Video metrics measured:

- Video quality (VMAF, VQTDL)
- Video fluidity (Frame rate, freezes)
- Video latency

Audio metrics measured:

- Audio quality
- Audio latency

Data collection:

- Video data is measured for every second of the test.
- Audio data is measured in 12-second intervals.

Repetition:

Test is repeated 4 times to ensure reliable results.

Limitations

Bitrate throttling test: 3Mbps to 500Kbps

- 8-minute call
- Throttling is applied to incoming and outgoing bitrate for one of the users, adjusted each minute to: Unlimited, 3Mbps, 2.5Mbps, 2Mbps, 1.5Mbps, 1Mbps, 750Kbps, 500Kbps

Bitrate throttling test: 500kbps to 100kbps

- 8-minute call
- Throttling is applied to incoming and outgoing bitrate for one of the users, adjusted each minute to: 500Kbps, 400Kbps, 300Kbps, 250Kbps, 200Kbps, 150Kbps, 125Kbps, 100Kbps
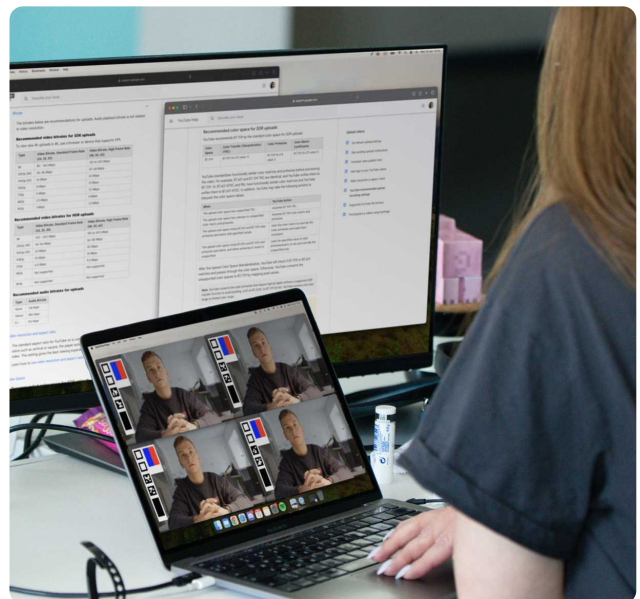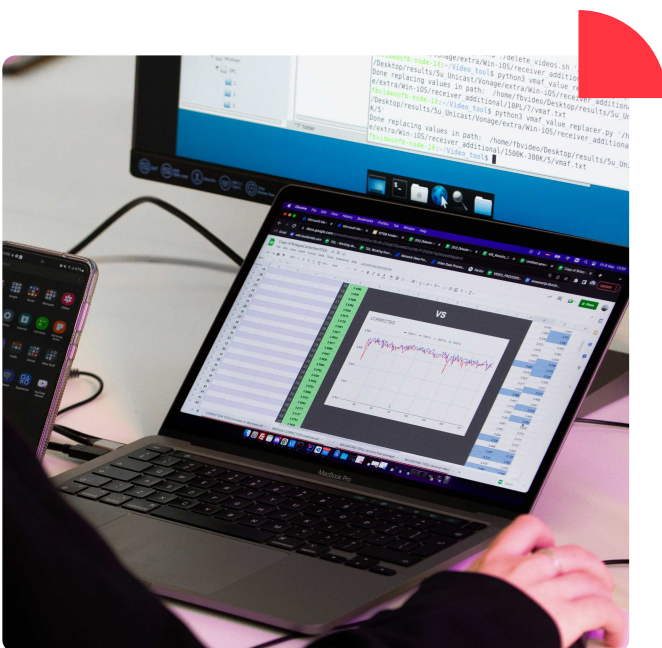
Packet loss

- 8-minute call
- Adding more packet loss during each call minute: 1%, 3%, 5%, 10%, 20%, 30%, 40%, 50%

Recovery test

- 3-minute call
- Start call with limited bandwidth (250Kbps /1Mbps)
- 1 minute into the call, enable unlimited bandwidth and observe behavior

Mixed/Realistic condition tests

- 3-minute call
- Three different limitations
  - 2 Mbps bandwidth, 0-1% latency, 0-10 added RTT
  - 1.2 Mbps bandwidth, 0-3% packet loss, 10-50 added RTT
  - 400 Kbps bandwidth, 1-7% packet loss, 100-150 added RTT

Service Reliability and Continuity Tests

Network Reliability Test

Checklist of true/false scenarios for different network protocols and blockages

Tested scenarios

- IPv4 blocking
- UDP port blocking
- TCP port blocking
- UDP traffic blocking

Handover/Interrupt Tests

Recovery time from different network scenarios/issues

- Handover Wi-Fi to Mobile
- Handover Mobile to Wi-Fi
- Handover Wi-Fi to Wi-Fi
- Network interrupt:
    - 1, 2, 3, 5, 10 seconds

Deliverables & Cost

Deliverables

Report

- Executive summary
- In-depth findings by analysts with explanations on app behavior
- Recommendations for improving application performance

Overtime and Average Data for Each Test

- Graphs for each metric
- Average data for quick visibility into areas of excellent and poor performance
- Overtime data for engineering analysis to observe app performance over time

Raw Test Files

- Video recordings
- Audio recordings
- Network traces

Cost

Service	Engagement Days	Cost
Video Call Reliability and Quality Review	20	$ 8000