Performance Benchmarking of Video Conferencing Application (Telemedicine)

Client Overview

- Client is an US based health care provider. They have developed a web and mobile based native Telemedicine based response system. The application will monitor the patient's vital information and will have the video conferencing feature to interact with multiple stakeholders (Doctors, Nurses and Patients)

Business Challenges

- Conduct Load Tests and Benchmark the Performance of the Video streaming calls

- Verify the application server's capacity to accommodate maximum number of connections accessed to through multiple channels (Web, Android & iOS) while monitoring the patient's vital parameters

Our Solutions

- Identified the business- critical transactions provided by client to perform stringent performance tests

- Create the test scripts using open source automation tool (Selenium, Kite, etc.) and capture the user actions / video calls

- Mimic the video file (with audio) by streaming the predefined high definition video file through the automated test scripts

- Carried out dry run of the scripts in short iterations to verify the consistency of the test scripts

- Simulate real-world conditions and monitor the video conferencing-based application

Test Results

- Kite and Selenium (open source tools) for Scripting and execution

- Create a grid in cloud setup and execute the automated scripts in 100's of machines or instances. Each machine will automatically invoke the browser , launch the video conferencing application (joining the virtual room) and stream the high definition video file

- Execute the test in cloud-based infrastructure

- Appium studio for collecting client-side metrics for android devices

- Zabbix / Prometheus / Grafana (Open source) to monitor the respective servers on real time basis

Results and Business Impact

- Reported application strength to handle 20 connections concurrently (to stream the video content) with the mixed combinations of Web, iOS and Android platform

- Reported critical performance metrics – In/out bitrates, packet loss, jitter, FPS, CPU/Memory Utilization, Network, etc.

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Case Study