CASE STUDY
TELEKOM
SEKTOR

THE CHALLENGES

In the competitive domain of telecommunications, maintaining high performance and seamless user experience across various digital platforms is crucial. Over a span of nearly four years, I served as a Test Automation Engineer on a significant Telekom project. My responsibilities included testing and providing automation solutions for various client products such as setup boxes, OTT devices, OTT platforms, AppleTV boxes, and AndroidTVs. One of the primary challenges was the need to automate the collection and analysis of live TV performance data for various use cases, such as channel switching times, power cycle durations, and EPG channel switching times. The requirement for continuous 24/7 operation to capture comprehensive performance metrics added another layer of complexity. Ensuring the system's capability to handle a vast amount of data while providing real-time analysis was critical. Additionally, the existing manual processes were time-consuming, error-prone, and lacked the efficiency needed to keep up with the rapid pace of technology advancements.

The testing environments varied greatly across different platforms, adding to the complexity and necessitating a versatile and adaptable solution. The client needed a robust and scalable solution that could operate seamlessly without constant human intervention, ensuring accuracy and reliability in performance testing. The ever-evolving technology landscape demanded a system that could adapt to new standards and devices swiftly. Moreover, the client faced significant pressure to maintain competitive edge by continuously improving user experience and reducing operational costs. These challenges necessitated the development of an innovative and automated approach to streamline the testing process, reduce human error, and enhance overall efficiency.

THE SOLUTION

To address these challenges, I developed an automated solution focusing on three main components: data export from Wireshark, data parsing and processing, and continuous testing. Initially, I created precise Wireshark filters to capture the necessary HTTP traffic data related to live TV performance, which was essential for isolating relevant data from the extensive network traffic. Using Wireshark, I exported the filtered data into Excel sheets, creating a raw data repository for further analysis. To handle and parse the large Excel files, I utilized Java, employing the Apache POI library for Excel manipulation. This allowed me to process the raw data, organizing it into new Excel sheets that included channel names, different use cases, platforms, and their respective durations, facilitating easier analysis and reporting. Furthermore, I provided automated report generation with two output options: direct entry into a database for integration with the client's data systems, enabling real-time data access and analysis, and CSV file generation for manual review and archival purposes. The solution was designed to run continuously 24/7, ensuring real-time data collection, which allowed for immediate detection of performance issues and proactive troubleshooting. Robust error handling and detailed logging mechanisms were implemented to ensure reliable operation and quick resolution of any issues that arose during continuous testing. By integrating these technical components, the solution not only streamlined the testing process but also significantly enhanced data accuracy and operational efficiency.

In conclusion, this automated solution provided a robust and scalable approach to performance testing, ensuring high performance and seamless user experience across various digital platforms. The client was highly satisfied with the efficiency and accuracy of the automated solution, which greatly improved the overall testing process and product quality.

TECHNOLOGIES & METHODS

JIRA • JAVA • APACHE POI • WIRESHARK TOOL • SQL • GRAFANA • ANDROID TV STICK • MAVEN • INTELLIJ • TESTNG • SMART TV • IRTRANS • ANDROID PLATFORM TOOLS • SIKULI • AVERMEDIA

STARKRAFT

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