

## Rest API Based System-level Test Automation for Mobile Applications

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**Abstract :** Today's mobile applications are communicating with servers more and more in order to access external services or information. Also, server-side code changes are more frequent than client-side code changes in a mobile application. The frequent changes lead to an increase in testing cost increase. To reduce costs, UI based test automation can be one of the solutions. It is a common automation technique in system-level testing. However, it can be unsuitable for mobile applications. When you automate tests based on UI elements for mobile applications, there are some limitations such as the overhead of script maintenance or the difficulty of finding invisible defects that UI elements cannot represent. To overcome these limitations, we present a new automation technique based on Rest API. You can automate system-level tests through test scripts that you write. These scripts call a series of Rest API in a user's action sequence. This technique does not require testers to know the internal implementation details, only input and expected output of Rest API. You can easily modify test cases by modifying Rest API input values and also find problems that might not be evident from the UI level by validating output values. For example, when an application receives price information from a payment server and user cannot see it at UI level, Rest API based scripts can check whether price information is correct or not. More than 10 mobile applications at our company are being tested automatically based on Rest API scripts whenever application source code, mostly server source code, is built. We are finding defects right away by setting a script as a build job in CI server. The build job starts when application code builds are completed. This presentation will also include field cases from our company.

**Keywords :** case studies at SK Planet, introduction of rest API based test automation, limitations of UI based test automation

**Conference Title :** ICTSS 2015 : International Conference on Testing Software and Systems

**Conference Location :** New York, United States

**Conference Dates :** June 04-05, 2015