

ABSTRACT

Assurance Case Playground is a web-based application designed to help users visualize assurance case diagrams. The application features two main functionalities: a canvas editor and an AI-based prompting system powered by Natural Language Processing (NLP). To ensure that the application performs well under increasing user load, performance testing is essential.

Performance testing is a type of non-functional testing that aims to measure an application's reliability, including response time and stability under specific workloads. In this study, load testing was used to evaluate the Assurance Case Playground under expected usage conditions. Prior to load testing, stress testing was conducted to identify the system's maximum load capacity.

Based on the performance test results, the canvas editor met all predefined performance objectives. However, the prompt AI feature showed performance limitations due to quota restrictions imposed by the external AI service. These results indicate that the canvas editor is stable and reliable under high load, while the prompt AI feature requires further optimization to function effectively.

Keywords: *load testing, assurance case, web application, Apache JMeter, performance testing, prompting AI*