

ABSTRACT: The increasing adoption of semantic web technology in application scenarios with frequently changing data has imposed new requirements on the underlying tools. Reasoning algorithms need to be optimized for the processing of dynamic knowledge bases and semantic frameworks have to provide novel mechanisms for detecting changes of knowledge. Today, the latter is mostly realized by implementing simple polling mechanisms. However, this implies client-side post-processing of the received results, causes high response times and limits the overall throughput of the system. In this paper, we present a heuristics framework for realizing a subscription mechanism for dynamic knowledge bases. By analyzing similarities between published information and resulting notifications, heuristics can be employed to “guess” subsequent notifications. As testing the correctness of guessed notifications can be implemented efficiently, notifications can be delivered to the subscribers in an earlier processing phase and the system throughput can be increased. We experimentally evaluate our approach based on a concrete application scenario.