A New Complexity Metric for BPEL Processes based on Weighted Structured Activities and Invokes

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Abstract:

As is the case with traditional software, business processes created using the Business Process Execution Language (BPEL) have an inherent structural complexity that increases whenever the processes are modified. High complexity is known to negatively affect process quality and must be measured using metrics to control it. This paper presents a new metric called Weighted Structured Activities and Invokes (WSAI). In order to establish WSAI's level of intuition, it is employed in measuring five scenarios of real-life BPEL processes created using the OpenESB Studio. The metric is then validated theoretically using the complexity category of Briand's Framework as well as Weyuker's properties with the aim of establishing its theoretical soundness. Results indicate that the new metric is both intuitional and sound, implying that it is a good metric for measuring the complexity of BPEL processes.