Enterprise systems are business-critical applications, and strongly influence a company’s productivity. In contrast to their importance, their performance behaviour and possible bottlenecks are often unknown. This lack of information can be explained by the complexity of the systems itself, as well as by the complexity and specialization of the existing performance prediction tools. These facts make performance prediction expensive, resulting very often in a “we fix it when we see it” mentality, with taking the risk of system unavailability and inefficient assignment of hardware resources. In order to address the challenges identified above, we developed a performance prediction process to model and simulate the performance behaviour and especially identify performance bottlenecks for SOA applications. In this paper, we present the process and architecture of our approach. To cover a variety of applications the performance is modelled using evolutionary algorithms, while the simulation uses layered queuing networks. Both techniques allow a domain-independent processing. To cope with the resource
requirements for delivering prediction results fast, EPPIC automatically acquires cloud resources for performing the modelling and simulation. With its slim user interface EPPIC provides an approach for easy to use performance prediction in a broad application context.

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