

A Systematic Approach for Performance Assessment Using Process Mining An Industrial Experience Report

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Abstract. Software performance engineering is a mature field that offers methods to assess system performance. Process mining is a promising research field applied to gain insight on system processes. The interplay of these two fields opens promising applications in the industry. In this work, we report our experience applying a methodology, based on process mining techniques, for the performance assessment of a commercial data-intensive software application. The methodology has successfully assessed the scalability of future versions of this system. Moreover, it has identified bottlenecks components and replication needs for fulfilling business rules. The system, an integrated port operations management system, has been developed by PRODEVELOP, a medium-sized software enterprise with high expertise in geospatial technologies. The performance assessment has been carried out by a team composed by practitioners and researchers. Finally, the paper offers a deep discussion on the lessons learned during the experience, that will be useful for practitioners to adopt the methodology and for researcher to find new routes.