

1. Jakub Czajka, Jacek Otwinowski and Jacek Kitowski: **Non-intrusive Data Inspection for Message-based Systems**

Message passing has become a popular communication pattern for distributed systems. Much has been published on the debugging of such systems but the research has mainly focused on emulating standard debugging functionalities, such as race condition detection, and not on the design of components which can be used across these systems. These generic designs allow us to closely study the inner workings of the systems and can form a base for more complex future designs. In this paper we present a design for a component to gather and view (inspect) messages exchanged inside a distributed system with message passing. First, we create a simplified model of message passing and state our requirements for the complete solution. Then, we present the design from the theoretical and practical points of view. In the end, we discuss the implementation of the component as part of the O² framework. We use the implementation to conduct benchmarks and measure the performance cost of using the component. We obtain promising results - the component does not decrease the throughput of messages in our tests. It can form a base for more complex components inside message-based systems. The study also serves as a blueprint for creating component designs for message-based systems.