

MDA Scalability

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OMG's Model Driven Architecture (MDA) is a novel way to increase software developer productivity. Requiring only a completely platform-independent model (PIM) in UML, MDA provides both the tools for transformation into the technology specific PSM and the generators to create the source code ready for final machine specific executable translation. What can we say about the performance of the end-product and how will it scale to changing operating conditions?

First we outline a method for the scalability analysis of MDA based developments. Starting with existing standards and already published results within the area of UML and middleware performance indicators, we judge them upon their relevance to MDA scalability.

Based on explicit trials and case studies we can rank the indicators and identify any missing ones. In essence, the effectiveness of various MDA defined mappings on the initial PIM are evaluated with respect to scalability. At this point we take into consideration how loose an MDA definition is and can see effects of alternative interpretations.

Our aim is to present checks and tests that enable developers to see whether their MDA models will run scalably or not. Given a specific PIM one just needs to look at the indicators and get a single measure of overall scalability. In the end even the question of which technology and platform to choose for an MDA design could be answered with ease.