

Modeling Services and Components in a Service-Oriented Architecture

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Abstract. Component-Based Development (CBD) and Web Services (WS) are nowadays used for building flexible enterprise-scale systems organized in a Service-Oriented Architecture (SOA). In order to gain the full benefits of the emerging technology and standards, an effective approach for modeling and architecting this complex distributed computing model is required. Current efforts in this direction are much behind the technology ones. This paper presents an approach to SOA modeling based on the concept of service component and standard UML modeling constructs. The service component interface goes well beyond the simple list of operation signatures in order to specify the complete contract between the service provider and consumer. The paper defines service components of different types, scope and granularity and puts them in the context of a model-driven development process in order to provide bi-directional traceability between business requirements and software artifacts.