The TAO of Patterns - Understanding Middleware and Component Architectures

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1 Abstract

Nowadays, most architects and developers have to cope with networked infrastructures when they build new software systems. E-Business is one of the main reasons for this trend, the wide-spread availability of network operating systems is another reason. Instead of using low-level communication mechanisms for plumbing distributed functionality together, standardized middleware and component technologies have become common place. The most notable examples are Microsoft COM+, Enterprise JavaBeans and CORBA Components. However, most of these technologies evolve over time. Moreover, the applications themselves must inevitably evolve due to changing requirements or the necessity to modify or extend their functionality. To cope with such a fast moving target, at least the core parts of the software architecture should remain stable and well-documented. Thus, architectural issues are very important when we are going to build complex software. The emerging discipline of software patterns helps to develop such systems by documenting good programming practice in a well-defined style. Patterns do not only help to build such systems, but also to understand existing software systems. In order to leverage middleware and component technologies, basic knowledge of the underlying design principles is essential. It is the goal of the talk to introduce basic elements of middleware and component infrastructures by using patterns. This helps to understand and compare such infrastructures, as well as to apply the extracted patterns in other software applications.

2 Biography

Michael Stal is the head of the Middleware & Application Integration group at Siemens Corporate Technology. He is co-author of the bookd "Pattern-Oriented Software Architecture - A System of Patterns", Wiley & Sons, 1996 and *Pattern-Oriented Software Architecture - Patterns for Networked and Concurrent Objects*, Wiley & Sons, 2000. In addition, he is editor-in-chief of the Java Spektrum Magazine, Siemens Primary Contact at the OMG, and former member of the ANSI C++ standardization working group.