June 2004

Container-Managed Exception Handling for the Predictable Assembly of Component-Based Applications
(Master

by

Kevin B. Simons
Dept. of Computer Science
Tufts University
Medford, Massachusetts 02155
ABSTRACT

Component-based technologies have shown great potential for increasing developer productivity and reducing time to market for software systems. However, current component technologies fail to meet the quality attribute demands of the software industry [4], such as reliability and security. System developers are unable to properly predict the behavior of a system assembled from commercial off-the-shelf (COTS) components, and the source code for such components is often not available for modification. Component containers have great potential to more accurately ensure certain quality attributes of COTS-based systems. Containers provide a set of services to the components that execute in them. For example, containers have been used to facilitate security policies and transaction management. This research suggests augmenting component containers in order to allow for exceptions to be handled independently of the components. This modification to the component framework yields a better separation of concerns and more robust assembly of commercial components. Before quality attributes of component assemblies can be determined, the execution of the system must be made more robust by properly handling exceptions.