

Abstract:

Enabling Technologies for Role Based Online Decision Engines

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The goal of our work at the Technical University of Berlin is to develop an RBAC system that can be used in business-to-business, e-commerce and e-government application architectures. This work was project driven from the early beginning. A valuable input from project partners was the specification of different use cases and scenarios, from which requirements for the RBAC system were derived. Our approach is based on these requirements, research results from the RBAC community and our own thoughts and practical experiences.

The result of this theoretical work was a specific understanding of RBAC, which can be described as a specialisation of the generic RBAC model with regard to the demands of networked application architectures. The crucial point is, that decisions regarding rights and permissions have to be made online. This is an important demand deducted from our requirement analysis. We decided to call this special class of RBAC usage "Role Based Online Decision" (RoBOD). We worked out a set of characteristic features of RoBOD systems and classified them as necessary (basic) and optional (extended) features.

The basic features of RoBOD are:

- access control of the model to the model itself
- support of administrative roles
- distributed access decision facility/access enforcement facility architecture

Our solution also includes the following extended features:

- a support of the modeling of business and access roles in one model
- object oriented RBAC modeling
- distribution
- scalability

RoBOD was successfully used in at least two different application environments in the EU project MultiPLECX. Our work on introducing RoBOD systems in the administration of our University is going on. This shows the usability and relevance of this kind of RBAC.

The implementation of a RoBOD system requires the use of certain enabling technologies which have to be integrated into an application framework.

- a usable authentication method

- role based auditing
- persistent objects
- secure communication
- special properties of the modeling language

In our paper we discuss the design decisions of our RoBOD implementation and take a closer look at the integration of common RBAC concepts. Also we give a short outlook on plans for further development and new fields of application of our RoBOD system.