Infrastructure support for Authorization, Access Control and Privilege Management

Günther Pernul
Department of Information Systems
University of Regensburg, Germany
guenter.pernul@wiwi.uni-regensburg.de

Abstract

It will be argued that traditional approaches for authorization and access control (i.e., discretionary, mandatory, and role-based access controls) are no longer appropriate to address the requirements of highly networked and distributed environments such as today’s b2c e-commerce or e-government applications, and that proper authorization and access control requires infrastructural support in one way or another. This support can be provided, for example, by an authentication and authorization infrastructure (AAI). Against this background and from the viewpoint of the different parties involved in a b2c e-commerce setting we overview, analyze, discuss, and put into perspective the requirements and some technologies that can be used to build and operate AAIs. A privilege management infrastructure (PMI) is one step further and able to support a comprehensive authorization service. Several new approaches for privilege management have emerged by dynamically controlling the users accesses based on exchanging and evaluating general user characteristics and credentials, most notable the attribute-based access control model (ABAC). During the talk we will develop a PMI service model as a reference that includes ABAC functionality and is based on the OASIS XACML specifications and lessons learned from different existing AAIs. Part of our work is carried out within the ongoing European research project Access-eGov that aims for the development of a European-wide e-Government service platform.