

**ANNOUNCEMENT**

Engiweb Security new Technical Paper has been selected for the:

**24th IFIP - International Information Security Conference (SEC 2009)  
held in Cyprus on May 18-20, 2009**

**Paper title and authors**

**A Probabilistic Bound on the Basic Role Mining Problem and its Applications**

Alessandro Colantonio, Engiweb Security - Roberto Di Pietro, Università di Roma Tre - Alberto Ocello, Engiweb Security - Nino Vincenzo Verde, Università di Roma Tre

**Paper abstract**

The aim of this paper is to describe a new probabilistic approach to the role engineering process for RBAC. We address the issue of minimizing the number of roles, problem known in literature as the Basic Role Mining Problem (*basicRMP*). We leverage the equivalence of the above issue with the vertex coloring problem.

Our main result is to prove that the minimum number of roles is sharply concentrated around its expected value. A further contribution is to show how this result can be applied as a stop condition when striving to find out an approximation for the *basicRMP*. The proposal can be also used to decide whether it is advisable to undertake the efforts to renew a RBAC state. Both these applications can result in a substantial saving of resources. A thorough analysis using advanced probabilistic tools supports our results. Finally, further relevant research directions are highlighted.

For further details please address your request to [info@engiweb.com](mailto:info@engiweb.com)