

Administrative Scope: A Foundation for Role-Based Administrative Models

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Jason Crampton, George Loizou: Administrative Scope: A foundation for Role--based Administrative Models. ACM Transactions on Information and System Security, Volume 6, No. 2, May 2003, Pages 201-231.

“Despite the enthusiasm for RBAC, the use of RBAC principles to manage RBAC systems has been less widely studied. We believe that this is a serious omission: any access control system should be dynamic and changes to such a system must be controlled.”

Presented by Slobodan

Summary

Motivation

Previous approaches:

Model:	Administration:
NIST RBAC	Not role-based.
RBAC96	Administrative permissions. Safety problem not decidable.
ARBAC97	Structural properties of role hierarchies. “It suffers from several problems”.

ARBAC97 in little more detail:

URA97: user-role assignment

PRA97: permission-role assignment

RRA97: role-role assignment (changes to role hierarchy)

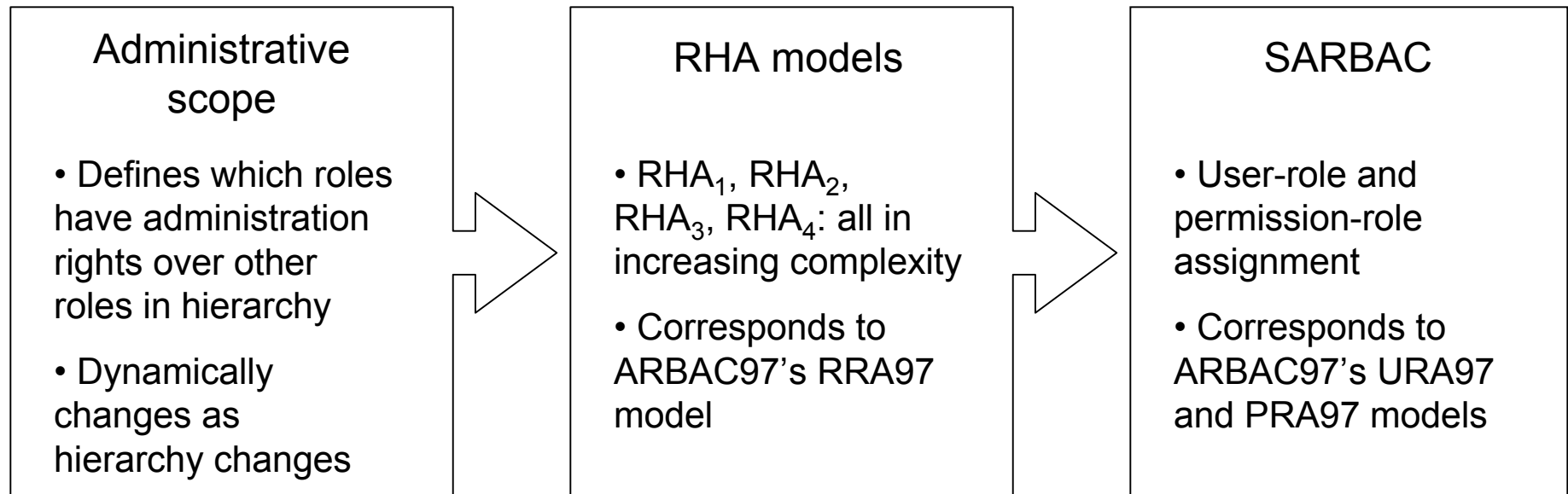
Constituent models of ARBAC97 developed independently of each other.

Summary

“The aim of this paper is... to develop an alternative approach to role-based administration that is complete, widely applicable, and versatile.”

Achievements

Role hierarchy administration models developed together with user-role and permission-role assignment. The resulting model is claimed to be *complete*, *versatile*, and *practical*.



Comments

Graph Based Formalism versus Administrative Scope (contra)

The differences are only mentioned in passing.

Lack of substance to support the claim that Administrative Scope is more complete, versatile, and practical.

A theoretical foundation (pro) (Too much theory? (contra))

For what it lacks in (non-toy) examples, it makes up in theory.

Is this sufficient to convey practicality?

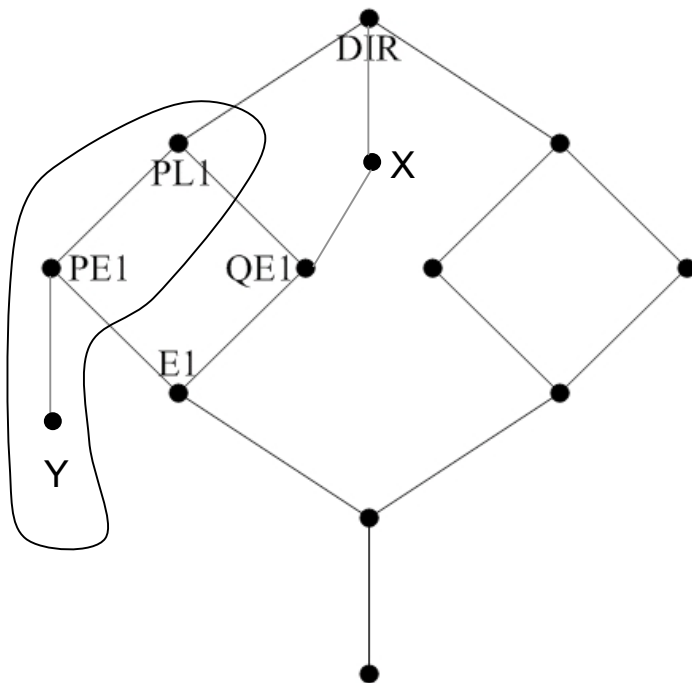
Detailed comparison with ARBAC97 (pro)

The paper compares SARBAC with ARBAC97.

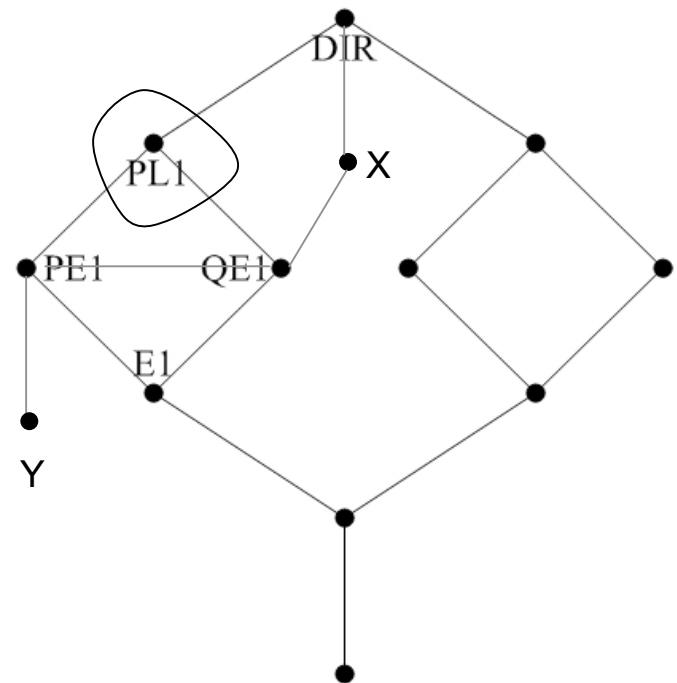
It gives a sufficient background about ARBAC97 such that meaningful arguments can be made.

Administrative Scope

Example: Administrative Scope of PL1 (continued):



AddRole(Y, \emptyset , {PE1})



AddEdge(PE1, QE1)

Discussion

How does one measure flexibility and practicality from a strictly theoretical description?

In which situations would administrative scope and SARBAC be applicable?