

**ANSI Enhanced RBAC Standard,
or
Adding Attributes to RBAC**

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Options for RBAC-ABAC merger

Option	U	R	A	Model	Permission mapping
0	0	0	0	<i>undefined</i>	—
1	0	0	1	ABAC-basic	$A_1, \dots, A_n \rightarrow \text{perm}$
2	0	1	0	<i>undefined</i>	—
3	0	1	1	ABAC-RBAC hybrid	$R, A_1, \dots, A_n \rightarrow \text{perm}$
4	1	0	0	ACLs	$U \rightarrow \text{perm}$
5	1	0	1	ABAC-ID	$U, A_1, \dots, A_n \rightarrow \text{perm}$
6	1	1	0	RBAC-basic	$U \rightarrow R \rightarrow \text{perm}$
7	1	1	1	RBAC-A, dynamic roles	$U, A_1, \dots, A_n \rightarrow R \rightarrow \text{perm}$
8	1	1	1	RBAC-A, attribute-centric	$U, R, A_1, \dots, A_n \rightarrow \text{perm}$
9	1	1	1	RBAC-A, role-centric	$U \rightarrow R \rightarrow A_1, \dots, A_n \rightarrow \text{perm}$

Quick introductions

- E.J. Coyne, T.R. Weil, [ABAC and RBAC: Scalable, Flexible, and Auditable Access Management](#), IEEE IT Professional, May/June 2013. - reviews tradeoffs and characteristics of role based and attribute based approaches.
- D.R. Kuhn, E.J. Coyne, T.R. Weil, "[Adding Attributes to Role Based Access Control](#)", *IEEE Computer*, June, 2010, pp. 79-81: discusses revisions to RBAC standard being developed to combine advantages of RBAC and ABAC approaches.