**INFS 767 Fall 2003** 

Administrative RBAC ARBAC97

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## SCALE AND RATE OF CHANGE

roles: 100s or 1000s

\* users: 1000s or 10,000s or more

- Frequent changes to
  - user-role assignment
  - permission-role assignment
- Less frequent changes for
  - role hierarchy











URA97 GRANT MODEL: can-assign			
ARole	Prereq Role	Role Range	
PSO1	ED	[E1,PL1)	
PSO2	ED	[E2,PL2)	
DSO	ED	(ED,DIR)	
SSO	E	[ED,ED]	
SSO	ED	(ED,DIR]	

URA97 GRANT MODEL :				
can-assign				
ARole	Prereq Cond	Role Range		
PSO1	ED	[E1,E1]		
PSO1	ED & ¬ P1	[Q1,Q1]		
PSO1	ED & ¬ Q1	[P1,P1]		
PSO2	ED	[E2,E2]		
PSO2	ED & ¬ P2	[Q2,Q2]		
PSO2	ED & ¬ Q2	[P2,P2]		







## URA97 REVOKE MODEL :

#### can-revoke

ARole	Role Range
PSO1	[E1,PL1)
PSO2	[E2,PL2)
DSO	(ED,DIR)
SSO	[ED.DIR]

### PERMISSION-ROLE ASSIGNMENT

- \* dual of user-role assignment
- can-assign-permission
  - can-revoke-permission
- weak revoke

strong revoke (propagates down)

#### PERMISSION-ROLE ASSIGNMENT CAN-ASSIGN-PERMISSION

ARole	Prereq Cond	Role Range
PSO1	PL1	[E1,PL1)
PSO2	PL2	[E2,PL2)
DSO	E1 Ú E2	[ED,ED]
SSO	PL1 Ú PL2	[ED,ED]
SSO	ED	[E,E]



























# Other Restrictions on deletion of roles

- Roles can be deleted only when they are empty.
- **\*** Delete the role and at the same time:
  - > assign permissions to immediate senior roles.
  - Assign the users to immediate junior roles.









