In a large-scale distributed system, what advantages might be gained by using role-based access control (RBAC)?

A server which is an object manager implements RBAC by issuing principals with persistent capabilities which include the fields “role” and “object-name”.

Describe how a signature field in the capability can be used to ensure its integrity. Define the protection the signature does and does not enforce.

How can such a persistent capability be made principal-specific? To what extent does this improve protection?

Discuss the desirability or otherwise of the persistence of capabilities and the use of persistent principal names.

Discuss revocation for the capability schemes suggested above.