

ProSEco- Collaborative Environment for Eco-Design of Product-Services and Production Processes Integrating Highly Personalised Innovative Functions



Security Solution contact person

Scott Hansen
The Open Group
Rond Point Schuman 6
5th Floor
B-1040 Brussels
s.hansen@opengroup.org
Tel. +32 2 6751136
Fax: +32 2 6757721



Security Solution

- Security Tool,
- Security Services,
- Security Methodology

www.proseco-project.eu



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This solution is developed in the scope of ProSEco project, and is one of the key solutions to support the design and development of new Product Extension Services (PES).

Security Problem

The “security problem” for a system identifies the assets of an organisation that are to be utilised by the system, and the protections to be afforded to those assets from identified threats. A solution to the security problem consists of mechanisms, policies, and procedures to safeguard the assets in the system’s operational environment against the threats. ProSEco entails security problems for both the development environment and for the developed PES in the deployment environment.

Security Solution

The solution to the ProSEco development platform security problem is relatively straightforward. However, the deployment environment has the distinct feature that its solution must be able to address the security problem of every conceivable PES that can be constructed with ProSEco. For the sake of economy of mechanism, the same security solution should be usable in both environments. While not solvable in general, ProSEco must provide an exceptionally flexible and adaptable security solution to this security meta-problem.

Security tool

The security tool, invoked from the ProSEco Portal, provides the capability of an authorised user to create user identities, establish user authentication data, define user authorisations, and create security policy structures. The tool is an interface to an exceptionally flexible and powerful security policy

definition paradigm based on the emerging Next Generation Access Control (NGAC) standard.

Security services

Among the ProSEco infrastructure and core services are the security services. These include a policy database to hold resource/user definitions and security policies, an API to interface with the distributed reference monitor for access to protected resources and to inspect, modify, and query the policy database, resource managers for each host that provides protected resources, session managers for each user initiated session, session initiation functions within the ProSEco Portal, the engine that uses the security policy database to calculate access decisions, and trusted channels for secure communication among these components.

Methodology

The security methodology provides a security workflow within the ProSEco workflow to identify the entities to be protected, the threats, the security policies, the PES security architecture, the needed security controls, to customise the security services as necessary, to write user/administrator security guidance, and to deploy security solution within the final PES application.

CHARACTERISTICS OF THE SOLUTION

Security Tool:

- Entity definition
- Policy creation

Security Services:

- Portal session create
- Policy administration
- Policy-based access

Security Methodology

- Security workflow
- Security policy
- Secure deployment

To create a security solution that is sufficiently general and powerful to solve the security problem of any PES that can be conceived and created with ProSEco.