Security Services Lifecycle Management in Dynamically Provisioned Composable Services

Yuri Demchenko, Cees de Laat (University of Amsterdam), Diego R. Lopez (RedIRIS), Joan A. Garcia Espin (I2CAT)

Security Services Lifecycle Model

- SDF Service Lifecycle Stages: Service Request (GR), Design Development, Deployment, Operate, Maintain, Decommission
- Security Services Lifecycle Stages: SecServ Request (GR), Reserve Session Binding, Deploy & RexBind, Regist & Synchro (Env), Operate Access, Decommission

Security Service request and generation of the GRI that will serve as a provisioning session identifier and will bind all other stages and related security context.

Deployment stage begins af ter all component resources have been reserved and includes distribution of the security context and binding the reserved resources or services to GRI as a common provisioning session ID.

Registration/Synchronization stage (optional) specifically targets possible scenarios with the provisioned services migration or failure/interruption. In a single case, the Registration stage binds the local resource or hosting platform run-time process ID to the GRI as a provisioning session ID.

Operation stage: security services provide access control to the provisioned services and maintain the security context.

Decommission stage ensures that all sessions are terminated, data are cleaned up and session security context is recycled.

Use case: Provisioning Multi-domain Collaborative Environment On-Demand

Components of the typical e-Science infrastructure involving multi-domain and multi-tier Grid and Cloud resources and network infrastructure.

Composable Services Architecture (CSA)

GEMBus Infrastructure for Composable Services

GEMBus provides common dynamically configurable messaging infrastructure for Composable Services communication

GEMBus is an ongoing development in the GNE JRA3 Task 3 Composable Services activity

Contributing Project

GEANT3 JRA3 Task 3 – Composable Services (GEMBus) - http://www.geant.net/

Credit: Yuri Demchenko, Cees de Laat, Diego R. Lopez, Joan A. Garcia Espin (University of Amsterdam)