

JASON: A Generic Architecture for Secure Remote Management


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Secure programming of services using smart cards and embedded devices is still a time consuming, costly, and error prone endeavour.

Goal

Design a secure, object oriented, distributed programming platform for smart cards and embedded systems with

- generic secure access to objects and their methods, irrespective of their current location, and
- separation of concerns: application programmer only needs to specify the security properties, not implement them.

Team

- RU, Nijmegen
- Chess IT, Haarlem

Generic secure access

Object oriented

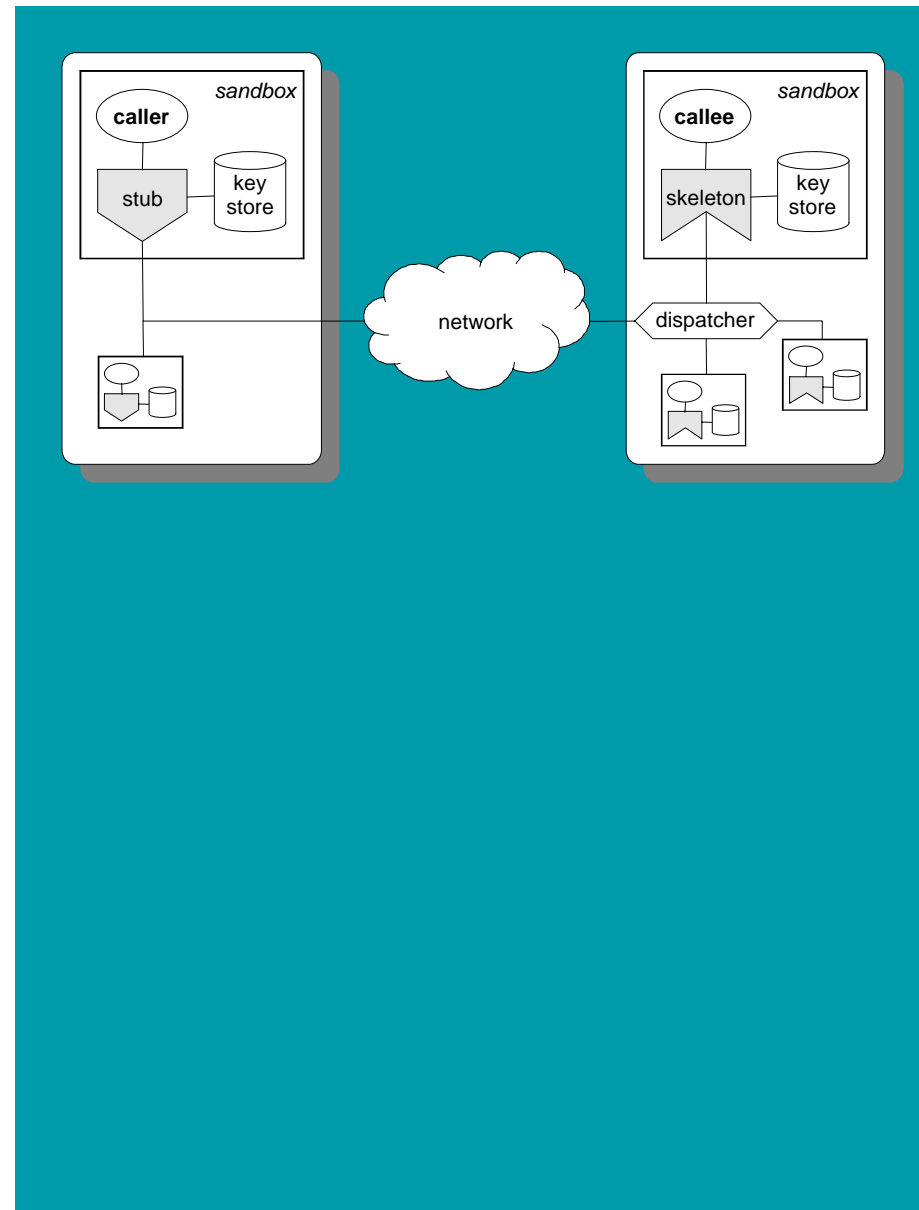
- Service = a collection of distributed objects

Interobject communication

- RMI
- SOAP

Secure communication layer (SCL) layer on top of RMI or SOAP

- Stub, skeleton, key store



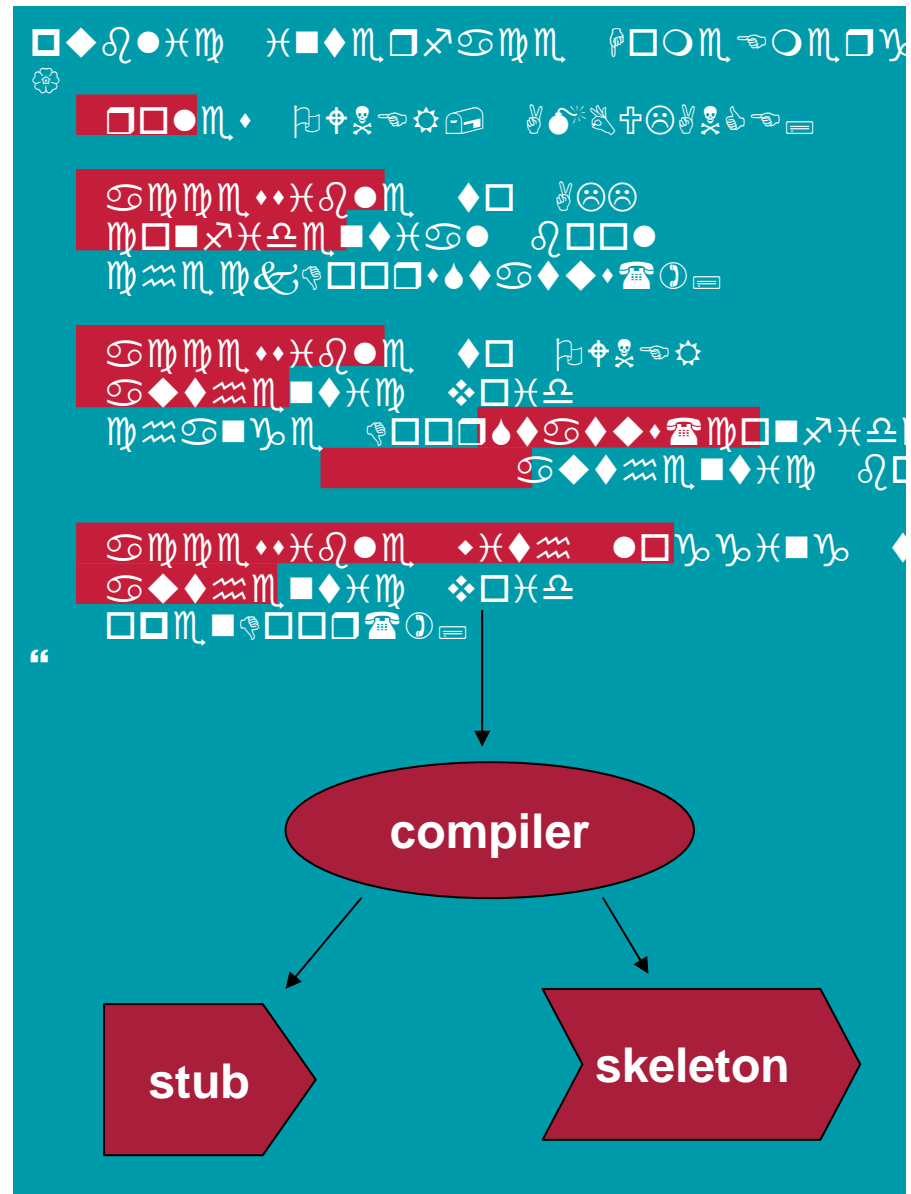
Seperation of concerns

Secure implementation of SCL

- Provided by platform

Service specific security requirements

- Specified by programmer, in
- Secure interface definition, based on
- Role based access control, using
- Keywords (authentic, confidential), on
- Each method signature



Conclusions

Security services implemented by platform once

- Can be implemented, verified, and certified by experts once
- Objects can be accessed at any location

Requirements specified by programmer using interface definition language

- Focus on requirements
- Can be compiled to different platforms (eg SOA)

Other initiatives

Kerckhoffs Institute

- Security master programme
- Collaboration RU, TU/e, UT
- www.kerckhoffs-institute.org

SAFE-NL

- Platform for security researchers and practitioners
- Informal workshops twice a year
- www.safe-nl.org



kerckhoffs
institute

The logo for the Kerckhoffs Institute features the name in two lines. The first line, 'kerckhoffs', is in a light green, lowercase, sans-serif font. The second line, 'institute', is in a dark blue, lowercase, sans-serif font.

SAFE
NL

The logo for SAFE-NL consists of the word 'SAFE' in a large, white, outlined, serif font, positioned above the letters 'NL' in a smaller, solid blue, sans-serif font. The background is a dark blue rectangle with a yellow and green gradient at the bottom.