Integrating secure tokens in OSGi
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Introduction

• Most systems now have security requirements
• This is especially true for mobile devices (in potentially hostile environment)
• Secure tokens help to enhance the system security level
Agenda

• What is a smart card

• Use cases in OSGi

• Smart card integration architecture

• Use cases in OSGi applications
What is a smart card?
What it is used for?

- Secure storage
  - Keys, credentials, rights
  - Tamper resistant

- Secure processing
  - Secret data never leave the card
  - The card is a (Java Card) application server
  - Decisions taken by the card
More than security

• Portability
  – Physical resistance
  – Small form factor

• Personalisation
  – Each card is unique
  – One way life cycle
The GSM example

Data storage
(Phone book, SMS)

User authentication

Java Card applications
(Infotainment, m-payment, games)
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User authentication to OSGi platform

• The card carries user’s
  – Authenticated identity
  – Rights
  – Preferences

• Markets
  – Wireless devices: The SIM
  – Automotive
  – Home gateway
Secure communication

• User authentication to servers
• Data encryption
• DRM

• For all markets
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Integration using JSR#177

• JSR#177: “Security and trust API for J2ME”

• Provides
  – APDU communication
  – Java Card RMI
  – PKI services (signature & certificate management)
Usage by OSGi platform

Physical link driver

JSR#177 Smart Card service

OSGi platform

PAM

JAAS

Custom impl

Platform administration agent

User Admin service
Usage by applications

- Physical link driver
- JSR#177 Smart Card service
- PAM
- JAAS
- Custom impl
- Platform administration agent
- User Admin service

OSGi platform

Application A

Application B

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Distributed application development
Use case: car user authentication

- Corporate fleet management
- Smart card allows
  - User authentication to the car
  - User’s role management
    - Driver / fleet manager
  - User’s rights management
    - Allowed driving days/hours
- Role Based security policy
  - “The fleet manager is allowed to retrieve logged routes”
Use case: room gateway

• Service gateway
  – LAN, TV, voice, air con, alarm

• Smart card allows
  – Pay services management (TV)
  – Preferences management (temperature)
  – Loyalty management
Conclusion

Secure tokens are key enablers to deliver …

Secure

Mobile

Personalized

.. services on OSGi platforms
Thank you

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