



MATERNA
WS4D-JMEDS
and
Explorer

Bastian Schierbaum

bastian.schierbaum@materna.de
MATERNA GmbH

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Contents

- JMEDS modularity enables:
 - Staying lightweight
 - Going beyond DPWS
 - Extensibility

- This presentation:
 - from improvements of the current (modularity)
 - over communication feature (network refreshing unit)
 - to solutions for more specific challenges

JMEDS: Security

Security

- It is now possible to
 - sign discovery messages
 - use secure communication over TLS/SSL
 - authorize with username and password

JMEDS: Security

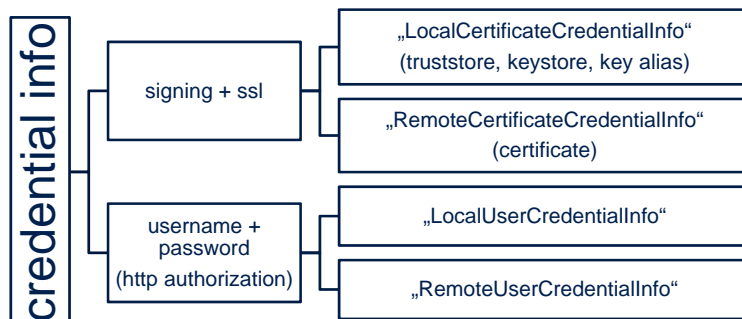
- Signed Discovery
 - using compact signature format
 - currently no canonicalization

- Secure channel
 - TLS/SSL with or without credentials

- Authentication
 - with X.509.v3 certificate
 - with username and password

JMEDS: Security

- CredentialInfo
 - main class for Security
 - includes various credentials



JMEDS: Security

- Security key
 - essential class for getting devices and services
 - includes
 - discovery information (e.g. interface id and credential info)
 - credential info for secure channels
 - use to get
 - device reference
 - service reference

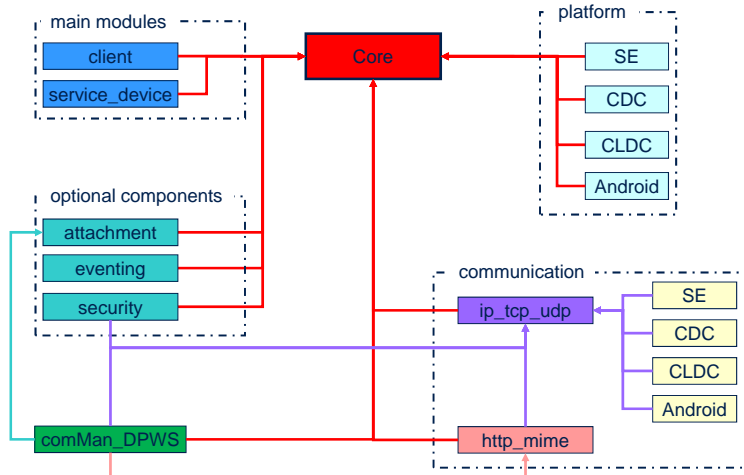
JMEDS: Modularity Cleanup

Modularity Cleanup

- lesser dependencies between modules
- replaceability of modules
- some modules are usable independently

JMEDS: Modularity Cleanup

JMEDS Modules



JMEDS: Network Management

Network Management

- Monitor
 - monitor network interfaces
 - announce changes
- Autobinding
 - several settings
 - automatic adjustment to network changings

JMEDS: Network Management

- Updates automatically
 - interfaces
 - addresses
 - discovery domains

- Manage changes
 - interface up, down, multicast status
 - address added, deleted

- Announce changes to clients, devices, services, event sinks
 - bindings
 - auto bindings
 - discovery domains

JMEDS: Network Management

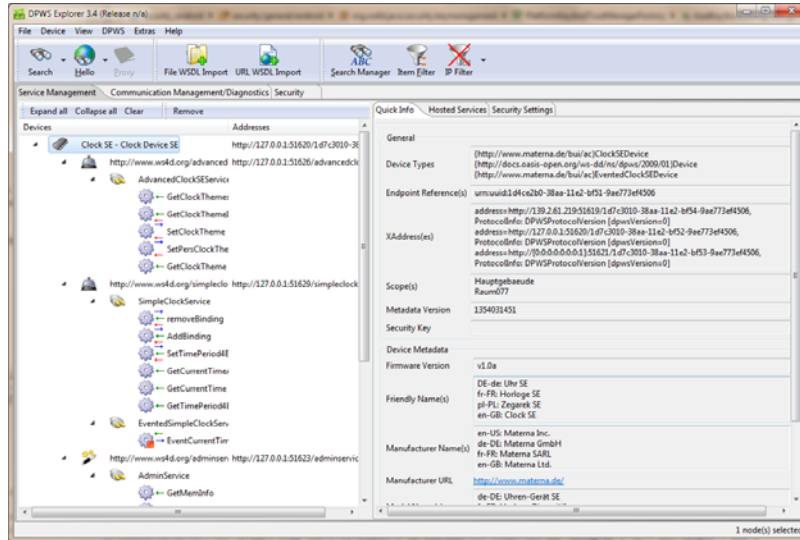
- Autobindings generate and manage bindings
- IP discovery autobinding
 - input
 - interfaces
 - IP versions (v4 / v6)
 - credential info
 - output
 - IP discovery bindings (unsecure / secure)
- IP communication autobinding
 - input
 - interfaces
 - IP versions (v4 / v6)
 - path
 - port
 - credential info
 - output
 - http / https bindings

Android

- Most of JMEDS is compatible with Android
- Some modules have android specific implementations
 - ip_tcp_udp_android
 - platform_android
 - security_android

- ip_tcp_udp_android
 - to find your wifi address automatically
 - to receive events if addresses or interfaces have changed (network refreshing unit)
- platform_android
 - to access the android context from JMEDS
 - to use android specific folders like: assets, int , ext
- security_android
 - to use keystores of type „BKS“ instead of „JKS“

Explorer

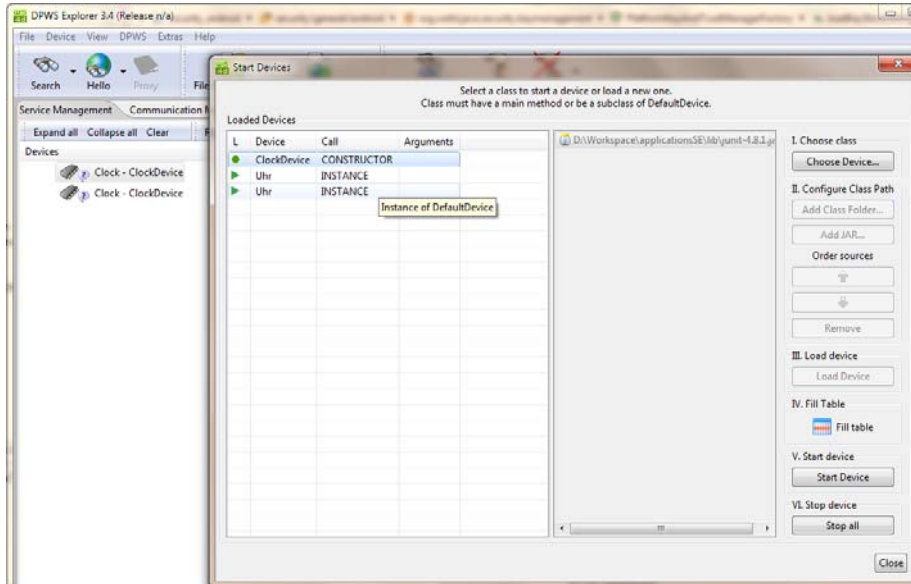


Explorer: Start and stop devices or classes

Start and stop devices or classes

- Execute at run time
- Start
 - devices (uses constructor)
 - any classes (uses main method)
- Stop
 - devices

Start and stop devices or classes

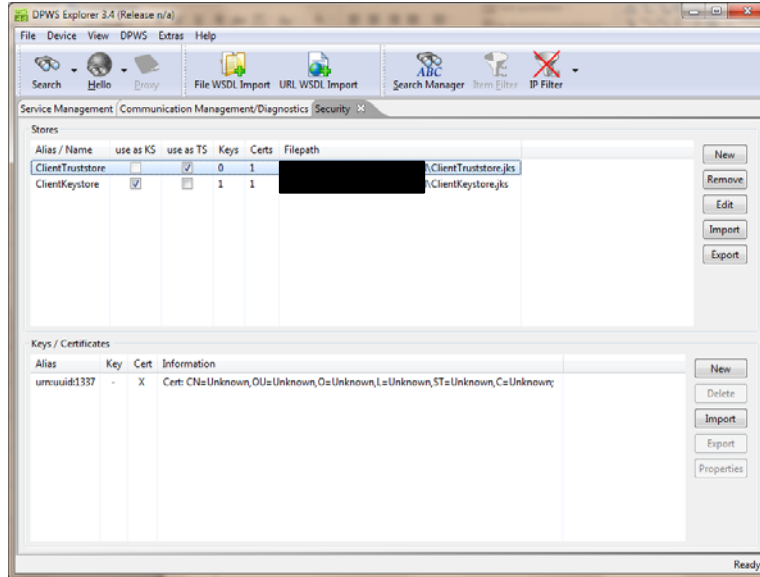


Explorer: Security management

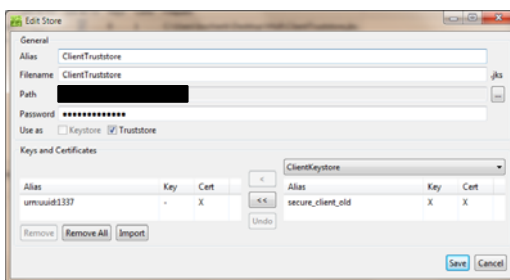
Security management

- Operations on stores, certificates, keys
 - generate
 - import and export
 - manage

Explorer: Security Management

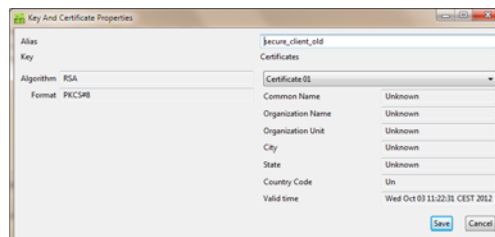


Explorer: Security management

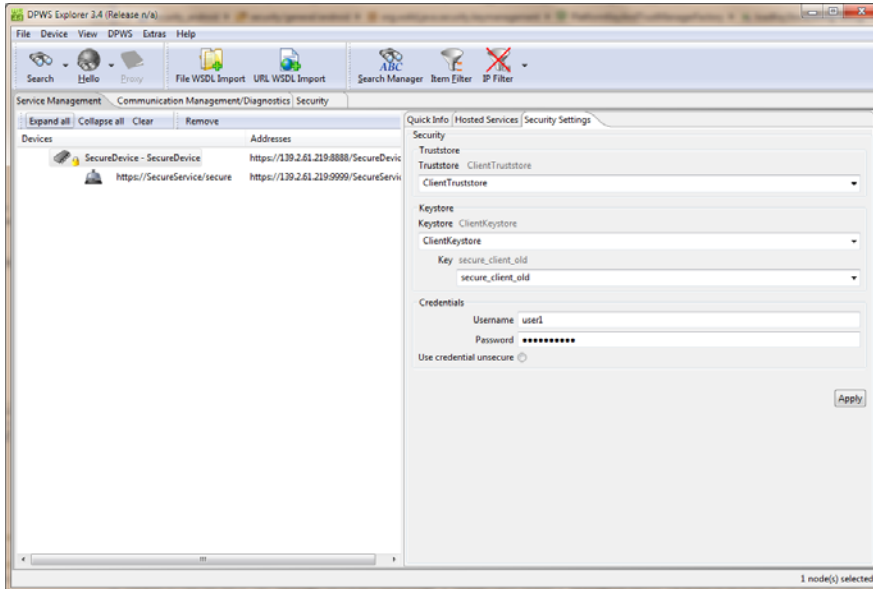


Edit Store

Key and Certificate Properties



Explorer: Security management



Future developments

- Stack
 - bugfixing
 - interoperability test

- Explorer
 - improved modularization
 - plugins for UPnP, Bluetooth
 - properties via Memento
 - explorer for Android

Questions

Questions ?