cryptoVision

Product Brief

SCinterface

SCinterface integrates smartcards and other security tokens in IT environments.

SCinterface integrates credentials from smartcards, tokens, remote tokens and virtual smartcards into common IT environments. SCinterface supports more than 100 different chip types, operating systems and profiles in different form factors. Useful features include biometrics and support of Microsoft Virtual Smart Card (MSVSC).

MANAGEMENT SUMMARY

Anyone who logs on to a computer usually uses a password in addition to the user name – this is an insecure method. Alternatively, a two-factor authentication is recommended - for example, using a smartcard or a security token and a corresponding PIN. Smartcards have proven themselves for decades - whether as bank cards or in the form of electronic ID cards.

The success of such a project depends on the software used to address the credential - the middleware. In today's heterogeneous IT world, a middleware must not be limited to one chip type or a specific operating system. Instead, it should be platform-independent and support as many applications as possible. In addition, standardized protocols and high-quality cryptographic procedures should be used.

SCinterface is a powerful middleware that enables the use of credentials in a wide variety of security devices. SCinterface supports all relevant interfaces on all major platforms: Microsoft CSP and Minidriver (for Windows), Apple Crypto Token Driver (for macOS) and PKCS#11 (for Linux derivatives, Windows and macOS).

As more than 100 different chip types, operating systems and profiles can be connected in different form factors, SCinterface prevents dependency on a specific manufacturer and offers unrivalled independence.

With RSA and ECC algorithms, SCinterface supports procedures recommended by IT security authorities worldwide. Product features such as platform independence, a modular architecture, the implementation of all major standards, support for Microsoft Virtual Smart Card and biometrics make SCinterface one of the most diverse and innovative solutions of its kind.

What is a middleware?

An identity check (authentication) is necessary for operating system login, VPN access and similar purposes. Passwords are still mostly used for this purpose, although they are neither secure nor user-friendly. An alternative is a security token with PIN or biometrics. A Security Token can generate, import or contain a secret key that can be used as a password alternative and others that are suitable for encryption and digital signing. To use a Security Token on a PC, middleware is mandatory.

This is a software component that connects a credential with an application. The core of a middleware is a driver that provides a crypto interface to the application and maps this to elementary commands for the security token. Since users often want to use the same security token on different platforms, a middleware must support different operating systems. In addition, there are dozens of types of security tokens, each with a different file structure, and different crypto-interfaces that must be operated.

Crypto Interfaces

The most important crypto interface is PKCS#11, which is manufacturer independent and supports Firefox, IBM Notes, Adobe Reader and Linux-based operating systems, among others. Microsoft has created its own interfaces for the same purpose: first the Microsoft Cryptographic API (MS-CAPI) for Windows 2000 and XP, and from Vista onwards the successor CNG (Cryptography API Next Generation). CNG provides in particular for so-called Smart Card Minidrivers - modules that enable easy addressing of smart cards through downloadable connectors. For macOS there is the CryptoTokenKit (CTK) Framework including the corresponding drivers (Crypto Token Driver). SCinterface supports PKCS#11, MS-CAPI and CNG (including Smart Card Minidriver) including corresponding drivers (Crypto Token Driver).

BASICS

SCinterface
The SCinterface middleware is ideal for customers who have high security requirements without having to sacrifice flexibility. A card, virtual smart card or token becomes a multifunctional tool with SCinterface.

eIDAS conformity
SCinterface supports seal tokens and signature cards according to the European signature regulation eIDAS.

Security devices
SCinterface supports over 100 security devices and profiles. These include the MS VSC Gids profile, the current versions of JavaCard as well as cards from Atos, Infineon, NXP, Gemalto, G&D and Austria Card.

Operating systems
SCinterface is available for Microsoft Windows, Linux and macOS. The user can use the same security device on all these platforms.

Plug-ins
The functional range of SCinterface can be extended with plug-ins. In this way SCinterface can, for example, inform about expiring certificates and import root certificates

Convenience kit
SCinterface supports biometric procedures (SCinterface biometric) and secure PIN caching (SCinterface Cache) with the add-ons from the Convenience Kit.

Biometrics
SCinterface supports fingerprint authentication with Match-on-Card.

Microsoft Virtual Smart Cards
SCinterface supports Microsoft Virtual Smart Card (MS VSC), including the associated initialization and personalization processes.
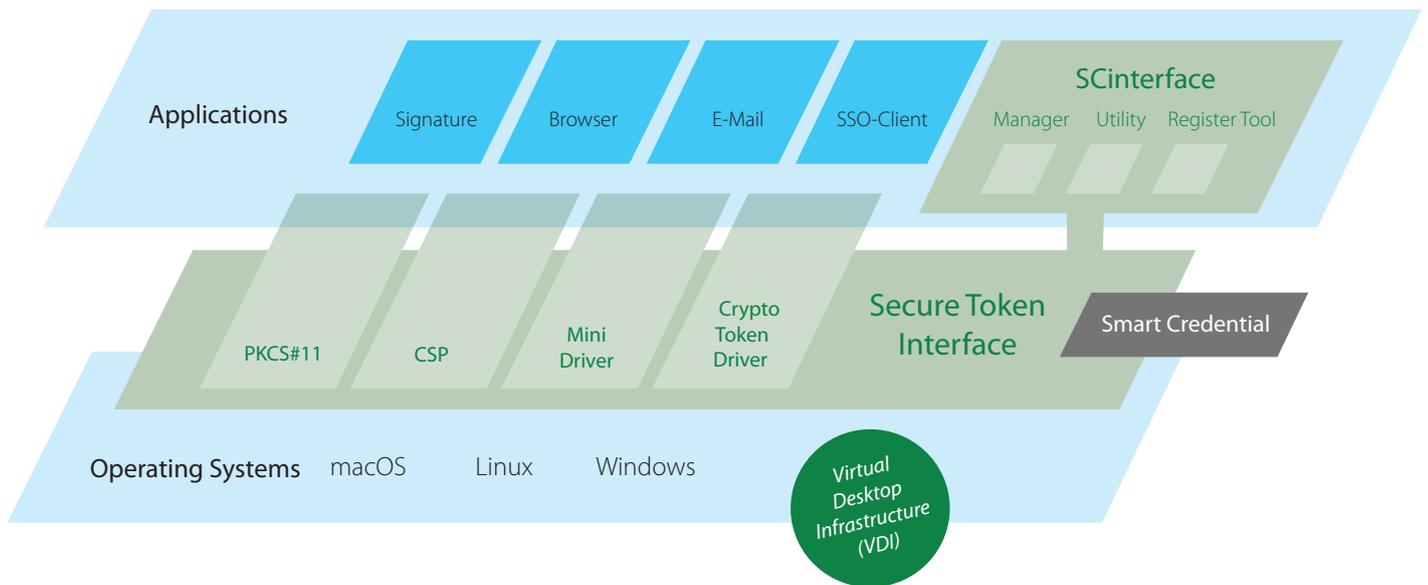
Crypto interfaces
SCinterface provides the necessary crypto-interface for almost every application on the underlying operating system.

eID cards
In eID projects with millions of cards it is common practice to support all common user platforms.

SCinterface meets these requirements and offers e.g. the modern protocol standard PACE to secure and protect contactless data traffic.

PRODUCT ARCHITECTURE

SCinterface consists of several modules. Some of them enable the addressing via crypto interfaces (MS-CAPI, CNG, PKCS#11, CryptoTokenKit), others are used for administration. SCinterface modules:

SCinterface Modules:

SCinterface Manager
Provides all necessary management functions - initialization, profiling, PIN management and key generation.

SCinterface Utility
Enables functions that are typically performed by the user, e.g. PIN change.

SCinterface Register Tool
Registers the stored digital certificates in the Windows operating system.

CSP Module
Provides a Cryptographic Service Provider (CSP) for the Microsoft Crypto API on Windows.

Smart Card Minidriver
Serves the Cryptographic API Next Generation of Windows.

PKCS#11-Module
Serves the PKCS#11 interface (e.g. for Linux derivatives, macOS and numerous application programs). Card management systems use the PKCS#11 interface for initialization and personalization.

Crypto Token Driver
Serves the CTK framework of macOS.

SCinterface and ePasslet Suite

SCinterface can be combined with the ePasslet Suite from cryptovision. SCinterface supports both the ePKI applet and the Common Criteria certified ePasslet Suite 3.0 with SSCD profile.

SUPPORTED SYSTEMS

Microsoft:
- Windows 7 SP1, 8.1, 10
- Windows Server 2008 SP2 / R2 SP1, 2012 R2, 2016, 2019

Linux:
- RHEL 6, 7
- Ubuntu 16.04 LTS / 18.04 LTS
- SLES 15

macOS:
- High Sierra (10.13)
- Mojave (10.14)
- Catalina (10.15)

Reference project

SwissSign, a specialist for identity solutions and subsidiary of Swiss Post, uses SCinterface for the product SwissID. SwissID is a smartcard (or token) that stores a private key.

SwissID is a plug-and-play solution: It includes signature software (SwissSigner) and a solution for secure communication. Both can be used without installation. This simple operation is made possible by SCinterface, which is delivered together with SwissID. Thanks to SCinterface, SwissID can be used on Windows, macOS and Linux. Whether the user accesses a protected website, signs PDF documents, encrypts e-mails or performs other cryptographic operations - SCinterface always works transparently in the background.

cryptovision

cv cryptovision GmbH is one of the leading specialists for modern, user-friendly cryptography and secure electronic identities. With its solutions, over 250 million people worldwide and a multitude of institutions in the digital world protect themselves against hacker attacks, manipulation, misuse of identities and espionage.

cryptovision addresses various industries such as public administration, health, automotive, finance & insurance, energy or IT. Its customers include countries such as Nigeria, Ghana and Ecuador, institutions such as the German Armed Forces, the German Federal Office for Information Security (BSI), the city of New York and companies such as E.ON, VW and Allianz.

CUSTOMERS

SCinterface is among others in use at the following customers:

- **Allianz:** The German insurance company uses SCinterface for authentication and digital signatures as well as SCinterface Cache for more business focus.

- **E.ON:** The German energy provider is active in the consolidating markets of Europe and increasingly globally. SCinterface is an important core component for securing access to company data and is also used for digital signatures.

- **Signal Iduna:** The German insurance company uses SCinterface to log on to the VDI (virtual desktop infrastructure) via IGEL Thin Clients.

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CONTACT

cv cryptovision GmbH
Munscheidstr. 14
D-45886 Gelsenkirchen

T: +49 209 16724-50
F: +49 209 16724-61
info@cryptovision.com

www.cryptovision.com