

# cryptovision SCinterface

## Integrates smartcards and other security tokens in IT environments.

Cryptovision SCinterface integrates credentials from smartcards, tokens, remote tokens and virtual smartcards into common IT environments. Cryptovision SCinterface supports more than 100 different chip types, operating systems and profiles in different form factors. Useful features include configurable PIN caching, biometry, and PACE support.

### 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, but also through more recent evolutionary steps as virtual or remote credentials.

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. Cryptovision SCinterface is a powerful middleware that enables the use of credentials in a wide variety of security devices. Cryptovision 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, cryptovision SCinterface prevents dependency on a specific manufacturer and offers unrivalled independence. With RSA and ECC algorithms, cryptovision 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 cryptovision 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, HCL 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). Cryptovision SCinterface supports all of these: PKCS#11, MS-CAPI and CNG (along with the Smart Card Minidrivers) as well as the CryptoTokenKit (including the Crypto Token Driver).

# Atos

## Basics



### Cryptovision SCInterface

The cryptovision 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 cryptovision SCInterface.



### Security devices

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



### Plug-ins

Cryptovision SCInterface can be extended with plug-ins. In this way, cryptovision SCInterface can, for example, inform the user about expiring digital certificates and import root certificates.



### eIDAS conformity

Cryptovision SCInterface supports seal tokens and signature cards according to the European signature regulation eIDAS.



### Crypto interfaces

Cryptovision SCInterface provides the crypto-interface necessary for almost every application on the underlying operating system.



### eID cards

Cryptovision SCInterface offers, among other things, Password Authenticated Connection Establishment (PACE) to secure and protect contactless data traffic.



### Convenience kit

The middleware cryptovision SCInterface supports various biometric procedures (cryptovision SCInterface Biometric) and secure PIN caching (cryptovision SCInterface Cache) with the add-ons from the Convenience Kit.



### Virtual Smart Cards

Cryptovision SCInterface provides its own virtual smart card and in parallel also supports the deprecated Microsoft Virtual Smart Card (MS VSC), including the associated processes.



### Operating systems

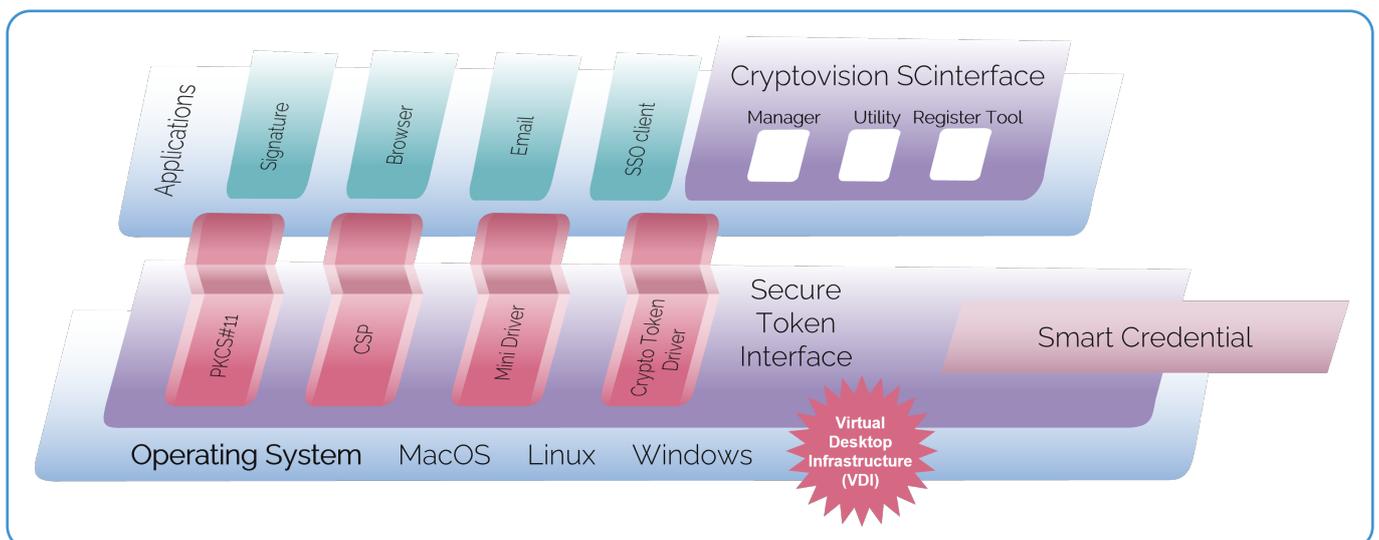
Cryptovision SCInterface runs on Windows, Linux and macOS. The same token can be used on all these platforms.



### Biometrics

Cryptovision SCInterface supports fingerprint authentication with Match-on-Card.

## Product architecture



Cryptovision 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.

# Cryptovision SCinterface Modules:

## SCinterface Manager

Provides all necessary management functions: initialization, profiling, PIN management and key generation.

## Smart Card Minidriver

Serves the Cryptographic API Next Generation of Windows.

## SCinterface Utility

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

## CSP Module

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

## SCinterface Register Tool

Registers the stored digital certificates in the Windows operating system.

## Crypto Token Driver

Serves the CTK framework of macOS.

## 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.

# Cryptovision SCinterface and cryptovision ePasslet Suite

Cryptovision SCinterface can be combined with the cryptovision ePasslet Suite. Cryptovision SCinterface supports both the ePKI applet and the Common Criteria certified cryptovision ePasslet Suite 3.0/3.5 with SSCD profile.

## Supported systems



### Microsoft:

- Windows 8.1, 10
- Windows Server 2012 R2, 2016, 2019 (32/64bit)



### Linux:

- RHEL 6, 7, 8
- Ubuntu 16.04/18.04/20.4
- SLES 12/15, SLED 12/15



### macOS:

- Mojave (10.14)
- Catalina (10.15)
- Big Sur (11)

## Customers

Cryptovision SCinterface is among others in use at the following customers:



The German insurance company uses cryptovision SCinterface for connecting multi-purpose smart cards.



The German energy provider is active in the consolidating markets of Europe and growing globally. Cryptovision SCinterface is an important core component for securing access to company data and is also used for digital signatures.



The European Patent Office chose cryptovision SCinterface for protecting online patent registrations. Cryptovision SCinterface replaced an existing proprietary solution that had led to a vendor lock.

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Let's start a discussion together



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