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sc/interface

Powerful and Secure Smart Card/Token Middleware

sc/interface is smart card middleware which integrates security tokens into IT environments, enabling uses like authentication, digital signatures, and single sign-on. This flexible solution supports more than 80 different smart card profiles across all major operating systems and their platform-specific interfaces.

MANAGEMENT SUMMARY

The rising demand for electronic identity verification requires much more than simple user names and passwords. Additional verification methods are a must, and digital certificates based on security tokens like smart cards are ideal for this purpose. As a very mature solution, smart cards have been widely deployed for years on bank cards and more recently on electronic ID cards.

With many different smart card options, the hardware typically is not an issue. In fact, successful projects depend much more on the middleware used. A middleware is software connecting a security token to applications. In the current heterogeneous IT world, a middleware should not depend on specific operating systems or devices. Instead, it should be platform independent and support a broad number of applications across differing devices. In addition,

strong security demands middleware that utilizes standards based protocols and advanced cryptographic methods. sc/interface is a powerful smart card middleware which connects applications (for instance: Windows, Outlook, Safari, Mozilla, etc.) to the desired smart card. It supports all relevant cryptographic interfaces for every major operating system: Microsoft CSP and Minidriver (for Windows and Windows Mobile), Tokend (for OS X), and PKCS#11 (for Linux derivatives, Windows, and OS X). With hardware support for over 80 card types, sc/interface removes dependence on any single card vendor and provides unrivaled interoperability.

Supporting both RSA and Elliptic Curve Cryptography, sc/interface meets the most demanding encryption standards recommended by USA-based NSA and the German BSI. With its platform independence, a modular architecture, and advanced cryptographic algorithm use, sc/interface is the most versatile and mature product of its kind on the market.

What Is A Smart Card Middleware?

Operating system login, VPN access, secure web portal access, and similar applications need appropriate protection. Many enterprises still use passwords for this purpose, which are neither secure nor convenient. As a replacement for passwords, more and more enterprises currently issue smart cards (or smart tokens) to their employees. A smart card is used for storing secret keys, which can be used as a secure replacement for passwords, but also for encryption and digital signatures. In order to use a smart card on a PC, a smart card middleware is necessary. A smart card middleware is a software component that connects a smart card (or a smart token) with one or several applications. The core of it is a driver, which offers a high-level crypto interface to applications and which talks to the smart card via a (proprietary) low-level interface. In addition, many smart card middlewares comprise a management tool for formatting, personalization and similar tasks. Smart card middleware technology is far from trivial. As many users use the same card on different platforms (e.g. PC and PDA), several operating systems need to be supported. In addition, there are dozens of smart card types with proprietary card interfaces. Finally, there are different crypto interfaces.

Crypto Interfaces Supported

The most popular crypto interface is PKCS#11. It is supported, among others, by the Mozilla suite, Lotus Notes, Adobe Reader and many Linux applications. Microsoft has created their own crypto-interfaces. Originally, the Microsoft Cryptographic API was released for Windows 2000 and XP clients as well as Windows Mobile devices. With Windows Vista, a new interface named CNG (Cryptography API Next Generation) was introduced. CNG includes the concept of Smart Card Minidriver. A Minidriver is a module which allows organizations to easily deploy smart cards by automatically downloading necessary connectors from Microsoft.

sc/interface supports both MS-CAPI and CNG and provides a Smart Card Minidriver. Finally, sc/interface supports the Apple crypto interface TokenD.

sc/interface
sc/interface is an advanced smart card and token middleware ideal for uncompromising customers who demand a high security level without compromising flexibility. When dealing with projects in the scope of millions of banking customers or citizens worldwide, broad platform support is crucial for user adoption and success. Leveraging sc/interface is the solution of choice, whenever smart cards or other security tokens are to be used for public key infrastructures for encryption, authentication, or digital signatures. The flexibility that sc/interface delivers allows for a single security token to become a multipurpose device. With it you can consolidate physical access with payment applications or secure website access with digital form signing needed for e-commerce or online government services.

Platforms
sc/interface is available for Windows, Windows Mobile, Linux, and OS X in 32 and 64 Bit. A user can use the same smart card on different platforms.

Smart Card Types
sc/interface supports over 80 smart card types. Among others, cards supplied by Atos, Infineon, NXP, Gemalto, G&D, Siemens and Austria Card can be used. Vurtual Smart Card is supported, too. One card model can easily be replaced by another.

Crypto Interfaces
sc/interface interoperates with virtually every application program on the market (e.g. Internet Explorer, Firefox, Outlook), because it supports all major crypto interfaces: PKCS#11, CSP, Minidriver, and TokenD.

Form Factors
sc/interface supports both contact and contactless smartcards. Along with smart cards, USB tokens, microSD cards and SIM cards smartphones can be used.

eID Documents
The scope of government projects with millions of cards issued requires coverage on all platforms for broad user acceptance. sc/interface covers all major client OS and supports modern standards like PACE.

Biometrics
As an alternative to a PIN, it is possible to use a fingerprint template for protecting a smart card. This option is more secure and more convenient. sc/interface supports third party Match-on-Card biometric technology.

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sc/interface consists of several modules. The system components provide access interfaces (MS-CAPI, CNG, PKCS#11, Tokend), while the administrator tool and the user tool are used for management tasks.
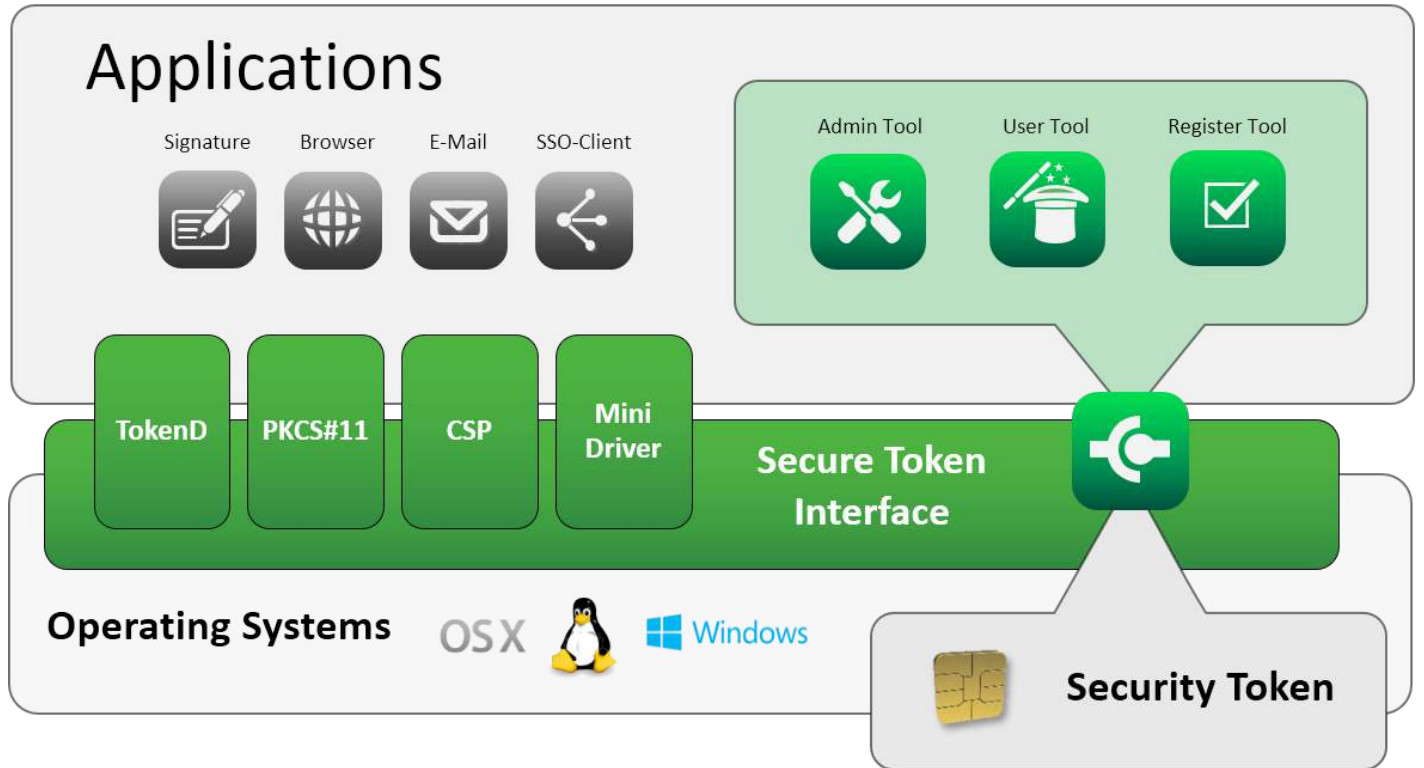
THE MODULES

sc/interface contains the following modules:

- **Administrator Tool (sc/manager):** Provides a complete range of card management functions (e.g. PIN management, key generation).

- **User Tool (sc/utility):** Simpler alternative for sc/manager. It is mainly used to change the user PIN.

- **Register Tool:** The Register Tool registers digital certificates stored on the card.

- **CSP Module:** Connects to Microsoft Crypto API for use with most Windows versions.

- **Smart Card Minidriver:** Connects to the Cryptographic API Next Generation interface for use with Windows 8.1 / 10 and Windows Server 2008 / 2012 R2.

- **PKCS#11 Module:** Connects to the PKCS#11 interface for use with Linux derivatives and Mozilla based browsers.

- **TokenD Module:** Connects to the TokenD interface for OS X and clients.

High Security Level

sc/interface is designed to meet even the highest security requirements. It provides security features including integrity checking based on code signing and PIN caching prevention.

SUPPORTED SYSTEMS

- Windows 7, 8.x, 10 (Technical Preview)
- Windows Server 2008 R2, 2012 R2
- Centos 7.1, Debian 7, 8, Fedora 22, Mint 17.2, LTS, RedHat Enterprise Linux 6.x, 7.x, OpenSuse 13.2, Ubuntu 14.04
- OS X Mavericks (10.9), Yosemite (10.10.4), El Capitan (10.11, 1)
- Citrix XenDesktop 7
- VMware Horizon

Success story

SwissSign, a leading provider of innovative identity solutions and subsidiary of Swiss Post uses cryptovision's smart card middleware sc/interface for their product SuisseID.

SuisseID is a smart card, which stores certificates and private keys of its owner. SuisseID is accompanied by a signature software (SwissSigner) and a solution for secure communication (IncaMail). The easy handling is granted by sc/interface, which is bundled with the SuisseID software.

Thanks to sc/interface the SwissSign signature cards and tokens can be used on Windows, OS X and Linux computers. No matter if the user accesses protected websites, signs PDF documents digitally or performs other cryptographic operations, sc/interface always works transparently in the background and thus rises customer satisfaction.

Customers

sc/interface is used (among others) by the following customers:

- Husky Energy: The Canadian energy supplier Husky Energy uses sc/interface for securing laptops.

- Minimax: The German fire protection supplier Minimax uses sc/interface for smart card authentication.

- Dresdner Bank: The German bank Dresdner Bank uses a remote version of sc/interface for user group based security.

About cryptovision

cryptovision is a leading supplier of innovative cryptographic IT security solutions. Based on its 15 year market experience and broad background in modern cryptographic techniques, such as Elliptic Curve Cryptography, all cryptovision products provide the most state-of-the-art and future-proof technologies. The company specializes in lean add-on components which can be integrated into nearly any IT system to gain more security in a both convenient and cost-effective way.

From small devices like citizen eID cards, all the way to large scale IT infrastructures, more than 100 million people worldwide make use of cryptovision products every day in such diverse sectors as defense, automotive, financial, government, retails and industry.