

CardOS FIDO2

Secure and convenient authentication with
CardOS smart cards



Towards a passwordless authentication

Passwords are often considered as inadequate. Often recognized as the weak link of authentication by security experts, they can be compromised more easily than other authentication means. Indeed, creating strong and unique passwords for each account can quickly become a challenge for users. As a matter of fact, the 2021 Verizon's Data Breach Investigation report¹ stated that 61% of breaches involved credentials, including 25% with the use of stolen credentials.

Atos is offering CardOS FIDO2 to address these challenges and enable users to login to their applications and services with much higher security. In this way organizations can introduce 2-factor-authentication with CardOS FIDO2, meaning the combination of something you have (a CardOS smart card) with something you know (a secret, the smart card PIN) for secure authentication purposes.

Using CardOS FIDO2 Authenticator offers the great advantage of using one Authenticator for multiple logins to different applications, while only one PIN is required to enable access to the authenticator.

CardOS FIDO2 is intended for customers in the public or enterprise market. Secure, convenient passwordless authentication is an upcoming topic, and numerous services already provide the option to use FIDO² authentication.

What is FIDO2?

FIDO2 (Fast IDentity Online) provides a secure, convenient, and simple authentication method. FIDO2's specifications are set to eliminate the risks of password theft and phishing attacks.



CardOS FIDO2: CardOS smart card as FIDO2 Authenticator

With CardOS FIDO2 Atos offers a FIDO2 Authenticator, based on a CardOS (DI) V5.3 / CardOS V5.5 smart card, compliant to FIDO2 specification and certified by FIDO™ Alliance.

FIDO2 authentication is based on Public key cryptography. Using the strong security mechanism of CardOS smart cards, the keys used for authentication are created in the CardOS smart card and never leave it.

Supporting FIDO2/CTAP³ protocol CardOS FIDO2 smart cards can be used for passwordless authentication to services accepting or requiring FIDO authentication.

CardOS FIDO2 offers customers the possibility to achieve a secure, convenient solution for password-less authentication. End users do not need to remember passwords and login names, but only authenticate with their authenticator (CardOS FIDO2) and the PIN of the CardOS smart card if user verification is required by the server.

As it frees users from remembering passwords for several applications, CardOS FIDO2 helps to lower helpdesk costs related to password reset.



¹www.verizon.com/business/resources/reports/dbir/

²The FIDO, FIDO ALLIANCE, FIDO AUTHENTICATION, FIDO CERTIFIED and FIDO2 trademarks and logos are trademarks of FIDO Alliance.

³Client to Authenticator Protocol (CTAP) is a specification enabling communication between a client and an external authenticator

Bringing FIDO2 to all your smart card usages

CardOS FIDO2 can be implemented as a dedicated function on a CardOS smart card, but as well in combination with PKI functionality and / or the Atos OTP solution.

CardOS FIDO2 is available for CardOS V5.3, CardOS DI V5.3, CardOS V5.5 available for as:

- FIDO2 Authenticator on a dedicated CardOS smart card
- FIDO2 Authenticator with integrated PKI functionality (PKCS#15, CardOS API)
- FIDO2 Authenticator with PKI and OTP (for use with CardOS API and CardOS SmartOTP)
- FIDO2 Authenticator package – for updating enrolled CardOS PKI cards

In all these cases CardOS FIDO2 licensing is offered per CardOS FIDO2 smart card.

Technical Realization

CardOS FIDO2 is realized by:

- FIDO2 package on card, implementing the functionality of FIDO2/CTAP protocol
- FIDO2 application on card, for the storage of credentials (keys) for authentication services

CardOS FIDO2 is compatible with PCSC smart card readers, or NFC enabled devices (ISO14443).

Current version

- CardOS FIDO2 V1.0 for CardOS (DI) V5.3, CardOS V5.5

CardOS Product Family

CardOS FIDO2 is the latest product of the CardOS product family:

- CardOS – smart cards and secure elements for various purposes: enterprise, public, IoT
- CardOS API – Middleware for CardOS integration in standard applications, on the main OS platforms and in IoT environments
- CardOS OTP solution – One Time password generation, securely on CardOS smartcard, supported by a desktop application
- CardOS FIDO2 - FIDO2 Authenticator on CardOS smart cards



About Atos

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Let's start a discussion together



For more information: atos.net/cardos

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