



# SMARTCRYPT SDK

## Application Layer Encryption Overview

Introducing the Smartcrypt Software Development Kit (SDK), by PKWARE.

Smartcrypt delivers high performance, cross-platform security that is easily embedded and managed without changing the way people work.

Embedding encryption operations directly into an application increases protection from security gaps existing in people, processes, and technology. Application layer encryption provides end-to-end protection, eliminating vulnerabilities in adjacent applications and the downstream systems used to store and exchange sensitive information.

Available for both structured and unstructured data, the Smartcrypt SDK integrates at the data access layer of the application, not the database or storage layer. Changes to existing applications consist of two or three lines of code.

For structured applications, only columns/fields that contain sensitive information, like credit cards or social security numbers are encrypted. This approach allows DBAs to continue performing their duties restricting only the visibility of sensitive information. Available options for length preserving or length + format preserving encryption aid in maintaining referential integrity.

### STRUCTURED DATA EXAMPLE #1:

- » Credit Card Number is AES encrypted
- » 19-char field length is preserved

#### Unprotected Data

Name	CCN	Date
 John Doe	5285-6013-3547-0861	01-25-14
 Jane Smith	4821-3619-2853-0725	10-02-15



#### PKWARE Cryptography API

Name	CCN	Date
 John Doe	RNPSKVcQguStaZDFBvW	01-25-14
 Jane Smith	beK226gMExlWqzvELx2	10-02-15

#### AES Encrypted, Length Preserved



For unstructured applications, persistent file-level encryption is applied which travels with the data.

The Smartcrypt SDK is available in multiple languages and is easy-to-use. It handles the complexity and heavy lifting of the most well vetted cryptographic services, key interfaces, key stores and key types accessible on each operating platform.

### STRUCTURED DATA EXAMPLE #2:

- » Credit Card Number is AES encrypted
- » 19-char field length is preserved
- » Format is preserved

### Unprotected Data

Name	CCN	Date
John Doe	5285-6013-3547-0861	01-25-14
Jane Smith	4821-3619-2853-0725	10-02-15



### PKWARE Cryptography API

Name	CCN	Date
John Doe	7115-8047-5733-2855	01-25-14
Jane Smith	6651-5653-5038-2719	10-02-15

### AES Encrypted Format and Length Preserved