

Instant Secure Data API Overview



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1 Introduction

1.1 Overview

Instant Secure Data API (ISDAPI) provides data encryption. In cryptography, encryption is the process of transforming information into an unreadable form (encrypted data). Decryption is the reverse process. It makes the encrypted information readable again. Only those with the key (PassPhrase) can successfully decrypt the encrypted data.

ISDAPI provides an Application Programming Interface (API) so that a company can encrypt data from within their own internal application. The data can be for internal application use or saved to a database or to a file. ISDAPI operates in Windows, Unix and Linux environments and can be programmed using C, C++, C# or Java.

ISDAPI uses TEA Variant to encrypt the data. The TEA Variant is a fast block cipher algorithm with a 128-bit key. The algorithm is simple, fast and secure.

1.2 Executive Summary

The ISDAPI is an API library that is available in 2 formats: ISDAPI base Java and native.

- The native release of ISDAPI can run on a wide range of platforms: AIX, HP-UX, Linux, Solaris and Windows.

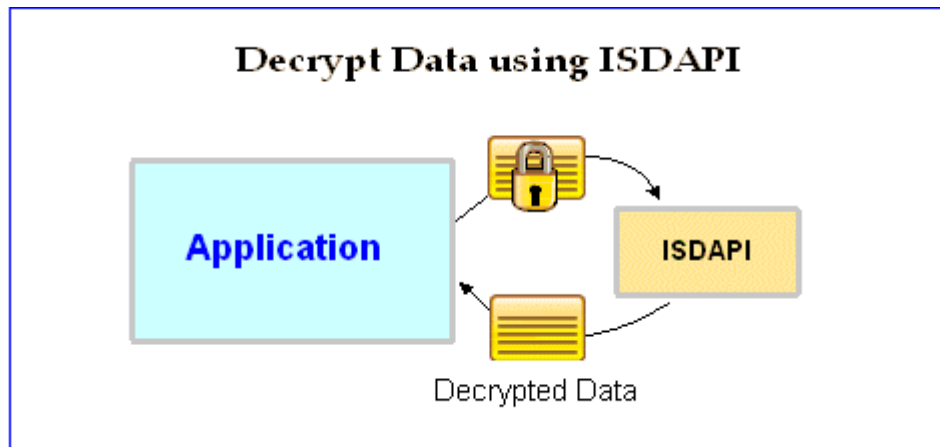
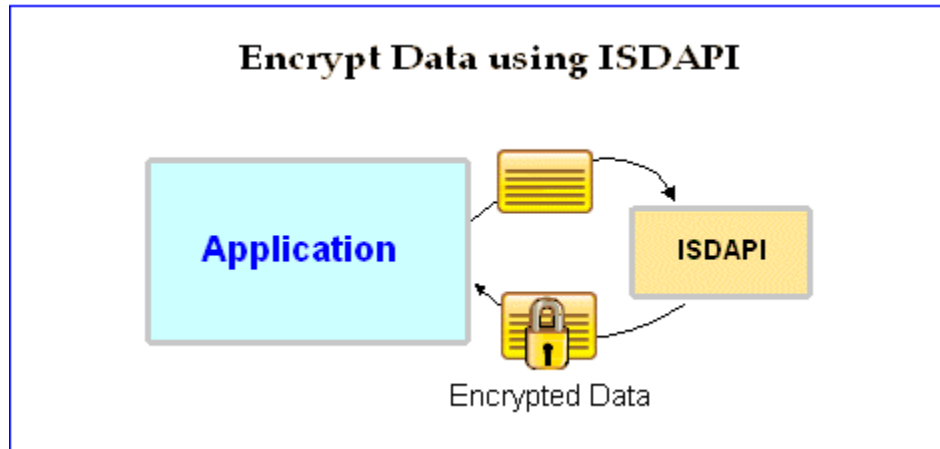
Operating System	32-bit	64-bit
AIX v5.1 or higher	Yes	Yes
HP-UX PA-RISC v11.00 or higher	Yes	Yes
Linux x86	Yes	Yes
Linux x86_64	Yes	Yes
Linux on POWER	Yes	Yes
Linux on zSeries	Yes	Yes
Solaris SPARC v8 or higher	Yes	Yes
Solaris x86_64 v10	Yes	Yes
Windows NT, 2000, 2003, XP Pro & Vista	Yes	n/a

- The ISDAPI base Java can be run on any platform that supports Java v1.3 or higher.

Major Features of ISDAPI:

- Easy to set up and configure
- Supports 4 programming languages: C, C++, C# and Java
- Uniquely encrypts message data using TEA Variant with a 128-bit key
- Simple and fast
- Natively supports 9 platforms: AIX, HP-UX, Linux, Solaris and Windows
- Provides high-level logging capability for encryption / decryption processing

1.3 Context Diagram (Logical View)



1.4 Prerequisites

This section details the minimum supported software levels.

1.4.1 Operating System

Instant Secure Data API can be installed on any of the following supported servers:

1.4.1.1 IBM AIX

- IBM AIX 5L version 5.1 or higher

1.4.1.2 HP-UX PA-RISC

- HP-UX v11.00 or higher

1.4.1.3 Linux x86

- Linux kernel, version 2.4
- glibc version 2.2.5 or greater

Sample distributions:

- Red Hat Linux v7.3
- SuSE Linux Enterprise Server v7

1.4.1.4 Linux x86_64

Sample distributions:

- Red Hat Enterprise Linux v4.0
- SUSE Linux Enterprise Server v9

1.4.1.5 Linux on POWER

Sample distributions:

- Red Hat Enterprise Linux v3.0 (with Update 2)
- Red Hat Enterprise Linux v4.0
- SUSE Linux Enterprise Server v9

1.4.1.6 Linux on zSeries

Sample distributions:

- Red Hat Enterprise Linux v4.0
- SUSE Linux Enterprise Server v9

1.4.1.7 Sun Solaris

- Solaris SPARC v8 or higher
- Solaris v10 x86_64 (64-bit)

1.4.1.8 Windows

- Windows NT, XP Pro or Vista Business (32-bit)
- Windows 2000 or 2003 Server (32-bit)

2 Appendix A - ISDAPI Calls and Structures

2.1 ISDAPI Overview

Function	Description
ISD_Init	Initialize global variables
ISD_EncryptData	API call to encrypt the data
ISD_DecryptData	API call to decrypt the data
ISD_VerifyEncryptedData	API call to verify the structure of encrypted data
ISD_Term	Clean up global variables

2.2 ISDGBL Global Structure

Fields	Type	Required	Input / Output	Description
Handle	HOBJ	N	I/O	Object handle for this particular initialization
ReturnCode	int	N	O	The return code returned by the API call
ReasonCode	int	N	O	The reason code returned by the API call

See Appendix B for a complete description of the Return and Reason Code values.

2.3 ISDOPT Initialization Options

Fields	Type	Required	Input / Output	Description
FileName	char[1024]	N	I	Path and filename of a isdapi.ini file
PassPhrase	char[15]	N	I	A 15-byte user defined PassPhrase
LicenseKey	char[32]	N	I	The ISDAPI license key