



Cloakware Transcoder

Protecting Algorithms and Data in Software by
Secure Code Transformation

KEY BENEFITS

- Secures your software and IP in non trusted environments.
- Reduces time to market for your application or device without compromising security

KEY FEATURES

- Easy to use tools
- Control Flow Transformations
- Data Flow Transformations
- Key Hiding

SUPPORTED PLATFORMS

- ANSI C and C++ for all major platforms
- Linux, Mac OSX, Windows, Symbian
- Embedded devices

Introduction

Cloakware Transcoder protects an application from attacks by concealing the proprietary algorithms and secrets that are crucial, such as the cryptographic keys embedded in the code.

Challenge

The increasing sophistication of hackers puts your products and your business at risk, especially when the application is executed on open computing platforms without special secure hardware. Threats to software security include reverse engineering, tampering and copying—all of which can be executed as scripted attacks that can be shared and/or launched over the Internet.

Transcoder

Cloakware Transcoder is an automated tool used to apply transformations to source code that protect application data and control flow from attack. Transcoded applications are functionally identical to the originals but are highly resistant to reverse engineering and tampering attacks.

Cloakware Transcoder lets you deploy your applications safely on untrusted PCs and devices or in hostile environments. The Transcoder also uniquely links White-box cryptography with code transformations to deliver integrated and layered protection that is far more secure than individual techniques alone.

DATA FLOW TRANSFORMATION

The objective of data flow transformations is to hide basic operations behind complex mathematical transformations and a high degree of additional uncertainty or entropy. Variables, constants and operations are all diffused into the program flow, making them extremely difficult to discover and trace.

CONTROL FLOW TRANSFORMATION

Control flow transformations secure a program by randomizing the block bodies of the target source code. This results in code that is extremely difficult to trace, and thus vastly increases the cost to the attacker who is attempting to reverse engineer the flow of the application.

ABOUT CLOAKWARE

Cloakware, an Irdeto company and part of the Naspers group, provides innovative, secure, proven software technology solutions that enable customers to protect business and digital assets in enterprise, consumer and government markets. Cloakware's two main product lines include: Cloakware Datacenter Solutions which help organizations meet governance, risk management and compliance (GRC) objectives for privileged password management while ensuring business continuity and the security of mission-critical data and IT infrastructure. Cloakware Consumer Product Solutions protect software and content on PCs, set-top boxes, mobile phones and media players. Protecting more than one billion deployed applications today, Cloakware is the security cornerstone of many of the world's largest, most recognizable and technologically advanced companies. Headquartered in Vienna, VA and Ottawa, Canada, Cloakware has regional sales offices worldwide.

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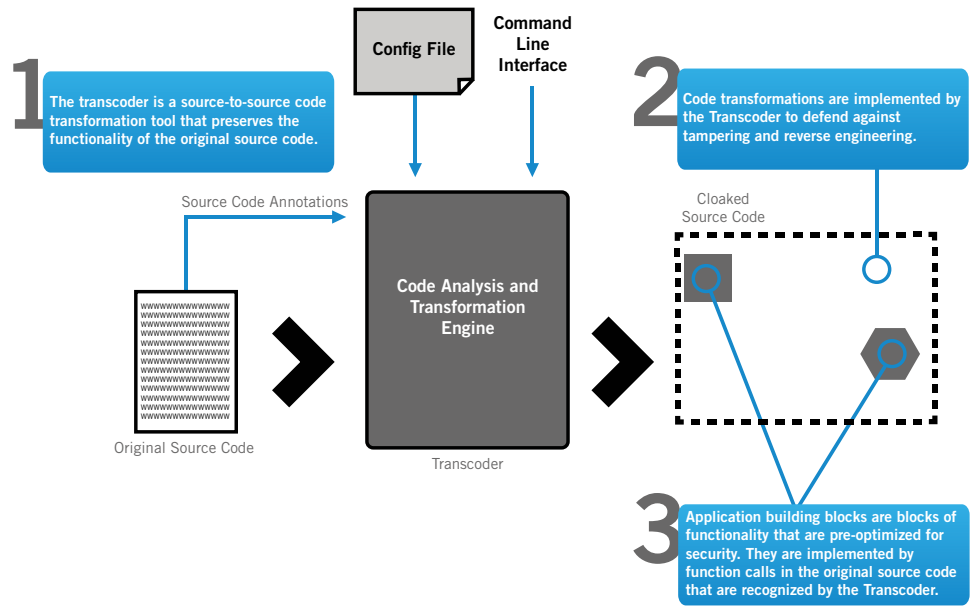


Figure 1: Transcoder workflow diagram

Transcoder advantages

Effective security

Defends against reverse engineering and tampering attacks

- > Automatically generates diverse obfuscated source code instances
- > Pre-defined security scripts to meet specific security and performance requirements

Seamless integration

Automated tools and utilities are integrated directly into the development process, enabling rapid deployment of security capabilities.

Inseparable security

Security is built into the application, not wrapped-on.

Proven scalability

Transcoder protects one deployment or produce millions of secure products

Diversity

Cloakware Transcoder technology can create structurally diverse but functionally equivalent instances of code. Diverse instances of the same application over the installed base make it difficult for attackers to collaborate. The effect of a successful attack is limited to one particular instance.

Renewability

Renewability is accomplished effectively using diversity. If a particular instance in a diverse set is compromised, it can be replaced with a new diverse instance. Renewable security enables automatable updating of keys, software and security measures.