

CLOAKWARE DRM SOLUTIONS

OMA DRM 1.0 CROSS-PLATFORM CLIENT ARCHITECTURE

INTRODUCTION

Cloakware OMA DRM 1.0 Client is an optimized cross-platform implementation of the Open Mobile Alliance™ (OMA) DRM 1.0 standard. OMA DRM 1.0 client fully implements the OMA DRM 1.0 specifications and supports all content delivery methods, enforces content licenses and provides mechanisms to manage super-distribution.

Cloakware establishes a strong base for maximizing the OMA DRM 1.0 Client's cross-platform capabilities. This architecture also abstracts common platform application development and integration requirements, which enables them to be optimized for target platforms.

THE FUTURE OF MOBILE CONTENT SECURITY TODAY

Leveraging extensive experience based on five years of proprietary DRM deployments, Cloakware team of experts has produced a full implementation of the OMA DRM 1.0 specification in a high-performance, low-footprint package. In partnership with leading mobile operating system and microprocessor providers, Cloakware designed the OMA DRM 1.0 Client for ease of integration and cross-platform portability. With an API that is consistent across all hardware platforms and operating systems, device manufacturers can now confidently rely upon a single OMA DRM solution for their entire product portfolio.

PROGRESSIVE ARCHITECTURE

Cloakware has developed an OMA DRM 1.0 Client solution with a progressive cross-platform client architecture. It is designed to meet a range of device requirements, from limited-capacity to high-functionality handsets. The client architecture divides components into two groups: platform-specific and platform-neutral. By compartmentalizing core components in this manner,

KEY FEATURES

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

KEY BENEFITS

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

SUPPORTED PLATFORMS

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



ARCHITECTURAL TIERS

The architecture of the OMA DRM 1.0 Client is divided into three main tiers:

- **Service Provider Interfaces:** This tier abstracts the platform-specific operations needed for communication between the OMA DRM Client and a platform or operating system.
- **DRM Services:** This tier provides the core management operations of the OMA DRM Client
- **Application:** This tier exposes functionality used to develop applications for content ingestion and content access.

Each tier exposes functionality with a well-defined set of responsibilities.

SERVICE PROVIDER INTERFACES

Service provider interfaces (SPIs) abstract all platform-specific operations while maintaining a common contract shared among the OMA DRM 1.0 Client components. This design helps to keep the core business logic of the client neutral from the underlying platform.

The client SPIs are grouped into two categories: the device portability enabler and the platform application enabler.

DEVICE PORTABILITY ENabler

The device portability enabler abstracts platform-specific functionality by exposing a common interface across all hardware and software platforms. These interfaces enable the OMA DRM 1.0 Client to communicate with the platform regarding core platform operations.

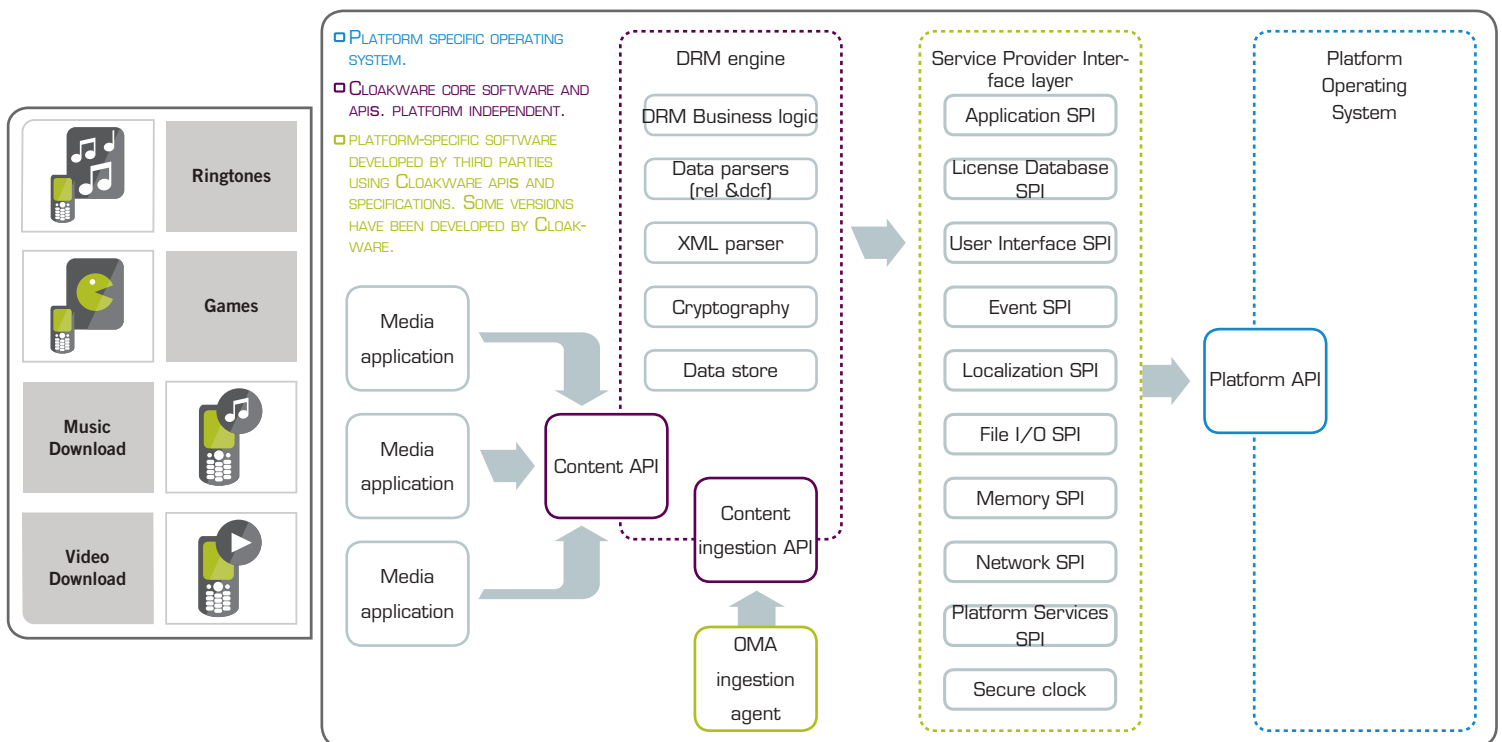
The SPIs in this group abstract the following:

- **File I/O:** System-level file data operations.
- **Network - I/O:** Network access operations.
- **Memory:** Memory-related operations.
- **Platform Services:** Artifacts that provide platform-related information, such as device attributes.

PLATFORM APPLICATION ENabler

The platform application enabler abstracts common application integration functionality for a target platform or operating system. These interfaces allow the OMA DRM 1.0 Client to communicate with consumers through the application tier. The SPIs in this group use a platform-neutral set of APIs, ensuring a consistent user interface experience regardless of platform. The SPIs in this group include:

- **Localization:** Abstracts the process of localizing data required for applications.
- **User Interface:** Abstracts user interface display characteristics with coarse-grained functions.
- **Application Manager:** Abstracts mechanisms to identify application-related information on a terminal, such as file location or MIME type.



DRM SERVICES

The DRM Services tier contains functionality for the core operations related to managing OMA DRM on the client. These services are fully compatible across platforms. DRM services are:

- **CRYPTOGRAPHY:** Provides required functionality to perform AES encryption and decryption.
- **RIGHTS EVALUATION ENGINE:** Abstracts the logic used to evaluate rights objects and enforce content usage constraints on the terminal.
- **DATA PARSERS:** Abstract data parsers for parsing XML/WBXML DCCF and multi-part MIME content.
- **RIGHTS DATA STORE:** Provides an efficient data store and retrieval mechanism for rights objects on the terminal.

APPLICATION INTERFACES

OMA DRM 1.0 Client components on the application tier expose functionality for accessing OMA content or performing required OMA operational tasks, such as content ingestion and rights analysis.

This tier exposes two core APIs:

- **CONTENT API:** Provides a robust function set for application developers to enable access to OMA content. This API can be supplemented by a "solution interoperability layer", that allows developers to map OMAO DRM Client function calls to existing application function calls.
- **CONTENT INGESTION API:** Provides a streamlined set of functions for processing OMA content and rights objects. This API enables third parties to develop custom download agents.

CLIENT INTEGRATION

Cloakware has ported the OMA DRM 1.0 Client to several mobile platforms. Integration involves installing Client software and adding Content API functionality to media applications.

