



VERIMATRIX
WATERMARKING

verimatrix
DRIVING TRUST

Verimatrix Watermarking delivers client and server-side protection of live, linear and on-demand video.

Key features

- Forensic watermarking for premium linear, on-demand and ABR services
- Imperceptible for premium VOD content, such as UHD
- Robust against multiple attack types, including compression, recording/capturing, re-streaming, collision, geometric manipulation
- Payload extraction possible from low-grade and mixed-source content
- Independent of video player and content distribution network
- Rapid identification and shutdown of the illicit stream source, such as live sports
- Opaque system with no personally identifiable data in video
- Cloud-based Reveal Service works with blind extraction

The growth of Ultra (U)HD content and proliferation of live sports streaming has underscored the need to protect these assets from misuse and unauthorized redistribution. To safeguard stakeholder revenue for premium content, video service operators are extending traditional conditional access system (CAS) transport protection by deploying forensic watermarking.

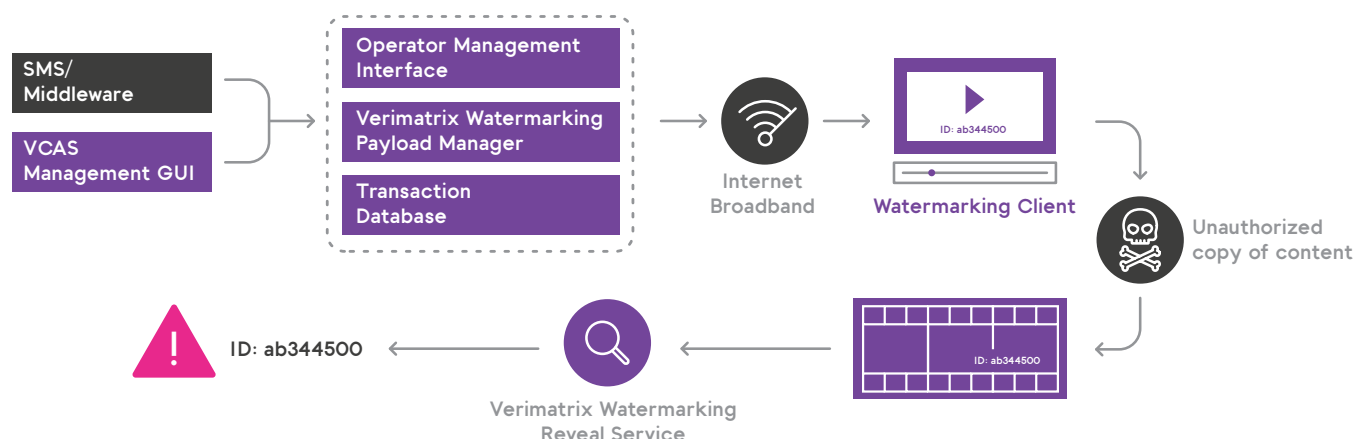
At the same time, studios and operators require new security tools to enable pay-TV business models that feature high-value content for OTT delivery to off-the-shelf CE devices, such as smart phones and tablets, game consoles, smart TVs and more.

Client-side Watermarking

Forensic video watermarking tracks and enforces content rights by inserting session identifier ("payload") into media at one or more points in a transmission system. Verimatrix was first to market with a fully integrated encryption, key management and watermarking solution for managed and unmanaged networks.

Deployment is streamlined through numerous pre-integrations with chipset vendors, as well as UHD set-top box makers and smart TV vendors. No video pre-processing is required. Verimatrix also offers standalone client-side Watermarking solutions, independent of CAS or DRM system, for IP and broadcast networks.

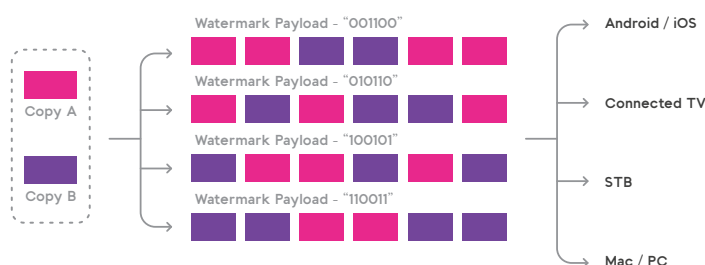
Architecture & Workflow



Server-side Watermarking

Verimatrix server-side Watermarking supports a highly efficient process to embed robust, secure and imperceptible watermarks in digital content before delivery to each client device. It is ideally suited to ABR streaming protocols such as HLS and MPEG-DASH, and it satisfies studio requirements for UHD and premium on-demand content.

The embedding process adds extremely little overhead, and it can be easily integrated into existing encoding and CDN workflows with negligible performance impact. Embedding consists of generating two streams with watermarks. A unique stream is provided to each subscriber as shown below.



Server-side Watermarking is a SaaS solution, running in the Verimatrix Secure Cloud, and is independent of the CE device DRM clients. A derivative configuration may be deployed by content aggregators and video service operators to embed an originating watermark in B2B content distribution applications.

Watermarking Components

Verimatrix Watermarking consists of session-based, user-specific tracking and source identification; real-time marking optimized for fast extraction during events, such as live sports; and a cloud-based Reveal service that analyzes a video file for potential watermarks and, when found, extracts the embedded payload. The Reveal service supports blind extraction of a payload with pirated content without requiring the original.

Client-side Watermarking comes with Verimatrix Multi-DRM as well as Verimatrix Player on iOS and Android devices. Being CAS/DRM independent, server-side Watermarking can be used by Verimatrix Multi-DRM. Both types are offered as an option for use with the Verimatrix Video Content Authority System (VCAS™).

For further details on all of Verimatrix solutions, visit www.verimatrix.com

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