

DPX® GPSA Security Architecture

Integrated security at the core of the DPX Gaming Platform



Features

- Hardware-rooted security architecture based on a dedicated secure processing core aligned with industry security frameworks
- End-to-end chain of trust spanning system start-up through runtime operation
- Secure boot with authenticated firmware and system validation
- Encrypted and verified data and media handling
- Secure framework supporting both local and remote updates
- Support for encrypted storage, including OPAL 2.0-compliant devices
- Integrated true random number generation (TRNG), compliant with NIST SP800-90B
- Dedicated software APIs and tools for seamless application integration

Introduction

As gaming platforms become increasingly connected and distributed, comprehensive security remains a critical requirement. Evolving cyber threats, combined with tightening global regulatory requirements such as the Cyber Resilience Act 2024, demand enhanced and more comprehensive approaches to platform protection.

The Gaming Platform Security Architecture (GPSA) is Advantech's proprietary security framework, engineered directly into the latest DPX platforms. Designed specifically for gaming applications, GPSA provides a trusted foundation that protects system integrity, secures data and media, and enables controlled updates throughout the platform lifecycle.

Unlike add-on security solutions, GPSA is embedded at the core of the system architecture, delivering persistent protection across all stages of system operation.

Integrated Security by Design

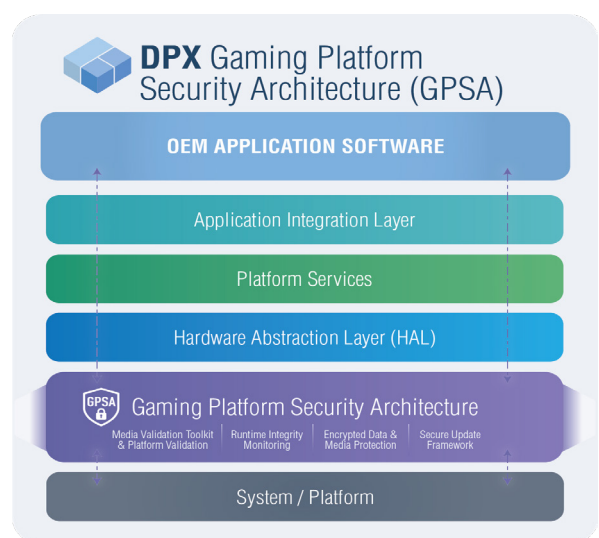
GPSA is not a peripheral feature or optional module; it is an inherent part of the platform design. Built into the system architecture from the ground up, it establishes a hardware-based root of trust that underpins all critical operations.

This approach ensures that every stage of platform operation is verified and protected, without reliance on external or add-on security layers.

Continuous Platform Integrity

GPSA enforces platform integrity through a multi-stage validation approach operating across the full system lifecycle.

From initial power-up through to ongoing operation, the platform continuously verifies critical system elements to ensure that only trusted components are executed. This helps prevent unauthorised modification, tampering, or execution of unverified code.



DPX GPSA - Security Architecture

Secure Data & Media Handling

All data and media interactions within the platform are subject to strict authentication and encryption controls.

GPSA ensures that both internally generated and externally supplied content is verified before use, protecting against unauthorised or malicious data entering the system. Independent security engines manage validation and access control, with zero tolerance for untrusted sources.

Controlled Update Framework

Modern gaming platforms require flexible update capabilities, but without compromising security.

GPSA provides a secure update framework that supports both local and remote updates, ensuring that all firmware, system components, and media are verified before being applied. This enables efficient platform management while maintaining strict control over system integrity.

Designed for Regulatory Confidence

With increasing global focus on cybersecurity and system resilience, GPSA has been developed to support compliance with emerging regulatory standards, including the Cyber Resilience Act 2024.

By embedding security at the architectural level, GPSA simplifies the path to compliance while reducing the operational burden on OEMs and operators.

Delivering Competitive Advantage

GPSA transforms platform security from a compliance requirement into a competitive advantage, enabling platform manufacturers and operators to:

- Reduce exposure to cyber threats and unauthorised system access
- Protect revenue streams by safeguarding system and content integrity
- Simplify compliance with evolving global security regulations
- Enable secure remote management and update capabilities
- Future-proof platform deployments with a scalable security foundation

OEM Customization and Product Development

Advantech Gaming Solutions provides PC-based hardware and software design services for regulated gaming applications, supporting customized platform development and long-term product lifecycle management.

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