

Use Case: KMS - Secure Key Management, Storage & Distribution

Situation

An Indian commercial vehicle OEM (focused on trucks) operates a secure manufacturing environment that requires a robust Key Distribution and Management System (KMS). This system must securely transfer cryptographic keys from a protected repository to the assembly lines, where the keys are injected directly into vehicle's ECUs. These ECU's are later integrated into finished vehicles delivered to end customers.

Additionally, the process must ensure a closed-loop mechanism with the original key provider to enable complete auditing and compliance.

Solution

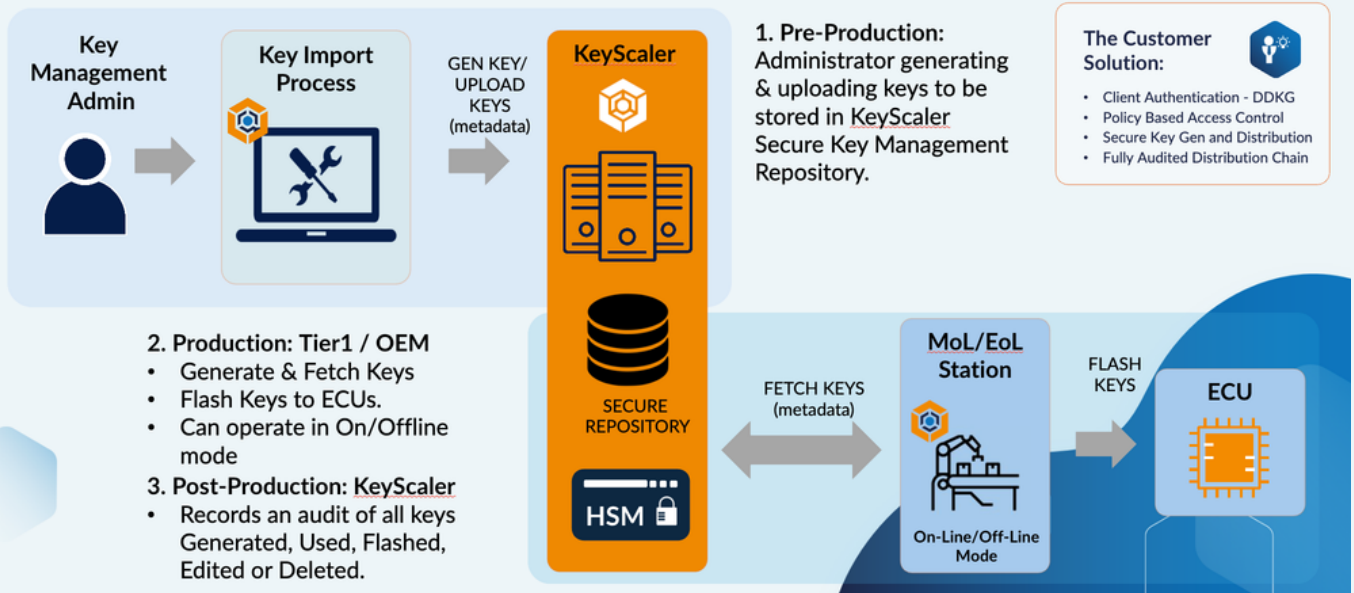
Device Authority KeyScaler is used to provide the following:

- Automated Key Generation and Rotation: Cryptographic keys are generated using strong algorithms and rotated periodically to maintain security integrity
- Secure Storage and Distribution: Keys are stored in a hardened repository and distributed via encrypted channels to assembly lines, ensuring zero exposure during transit.
- Policy-Based Access Control: Role-based policies govern who can access keys and when, reducing insider threats.
- Closed-Loop Auditing and Compliance: Every key injection event is logged, enabling full traceability and compliance with industry standards such as ISO 21434 and UNECE WP.29.

Key Results

- Enhanced Security: Eliminates risks of key compromise during manufacturing and distribution.
- Regulatory Compliance: Meets global automotive cybersecurity standards and audit requirements.
- Operational Efficiency: Automates key generation and provisioning, reducing manual intervention and errors.
- Scalability: Supports large-scale production environments with thousands of ECUs daily.
- Trust and Integrity: Guarantees authenticity of cryptographic keys throughout the vehicle lifecycle.

1. KMS



2. PKI



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