Security Solutions for IoT, Storage and Networking

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Inside Secure at a Glance

shield

Comprehensive package of software protection tools

Greatly simplifies integration of security for mobile apps such as payment HCE, financial, banking, retail, healthcare, and IoT

Application protection

safe

Studios-approved, market leading solution

Allows secure distribution of premium content on all OTT devices

Supports all major DRM schemes, advanced playback functionalities, analytics

Content protection

vault

The largest silicon-proven security IP portfolio for SOC and ASIC designs

For high-speed networking, IoT, datacenters and content protection

Silicon IPs

guard

Secure communication toolkits & cryptographic modules certified with high interoperability and portability

Widely used in security gateways, cloud deployments, smartphones, printers and other IoT devices

Data & communication

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TRUSTED BY THE WORLD'S TOP COMPANIES

Banks and payment system	   
Content distributor	     
Top IT companies	  
Major semi conductor companies	    

We protect the solutions of the broadest range of customers: service providers, content distributors, security system integrators, device vendors, semiconductor manufacturers

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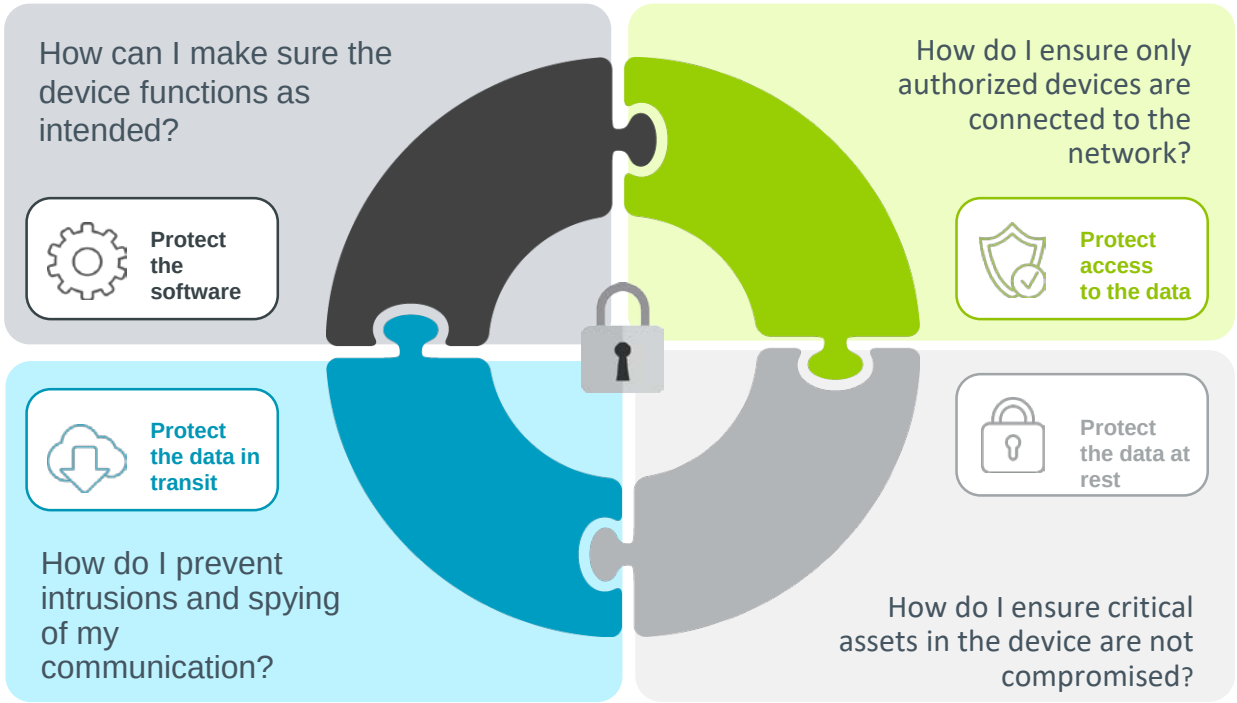
A complete “Secure Architecture”

INSIDE Secure VaultIP and Secure Boot SW



INSIDE Secure VaultIP & Device Authentication SW

INSIDE Secure Packet Engine IP or Guard SW

INSIDE Secure VaultIP & Secure Storage SW

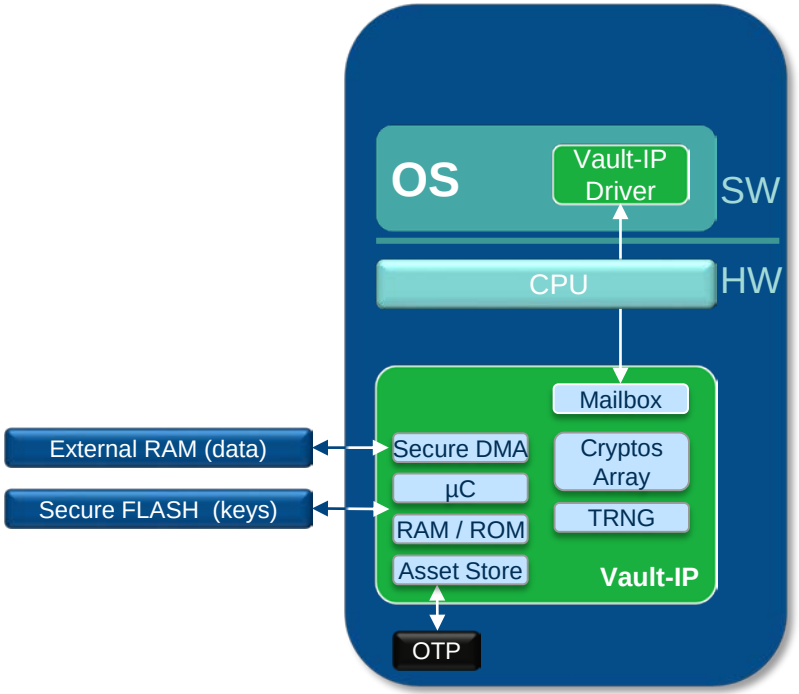
Security Requirements for Connected Systems

From Core to Cloud

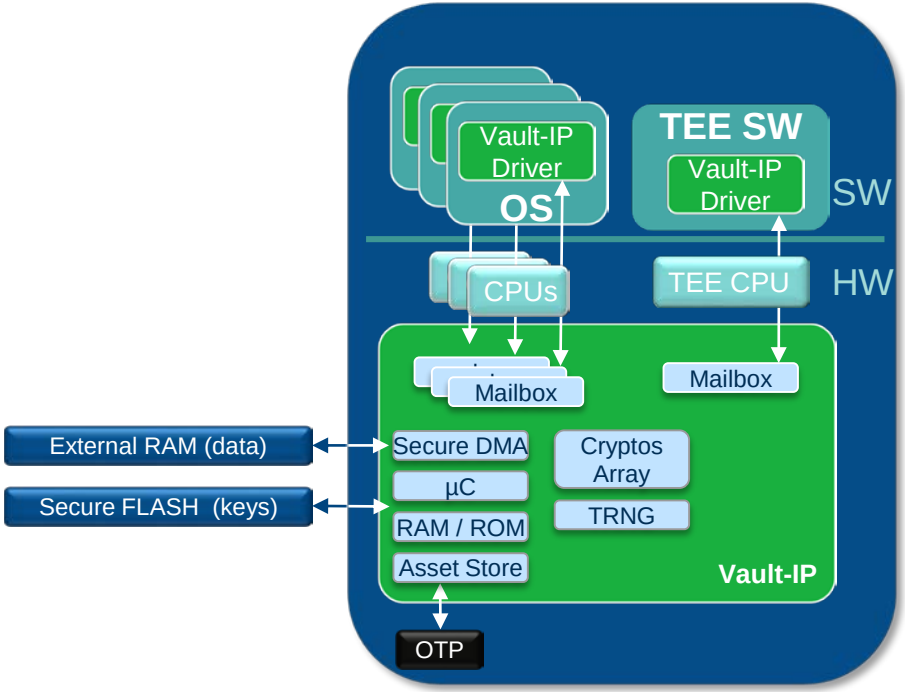
- Control plane secure tunnel establishment & key management:
  - Key refresh and tunnel setup rates matching 100Gbps and beyond
  - Efficient , area optimized Public Key Accelerators & True Random Number Generators needed
- Platform security
  - Secure Boot and Secure Debug
  - Trusted Execution Environment, Trust Anchor, Key Vault
- Mass adoption of standards based security protocols
  - SSL/TLS (Device/Server), IPsec (Client/Server), MACsec (Device)
  - Wireless – Zigbee, WPA, CAPWAP, LTE/3G Baseband,
  - Platform – Data Storage, Asset Protection
- Data plane performance continues to increase:
  - Not only client to cloud traffic increases but also inter cloud traffic, specifically server to data center and data center to data center bandwidth increase quickly.
  - L2: MACsec, many ports 400G Ethernet, 600Gbps FAT pipe & FlexE, multiport 100G, 1G, 10, 25G, 40G, 50G line speeds
  - L3: IPsec, 100Gbps and higher,
  - L4: SSL/TLS/DTLS, 40Gbps and higher

Security Anchor into your SoC

HSM without TEE



HSM with TEE and multiple CPUs



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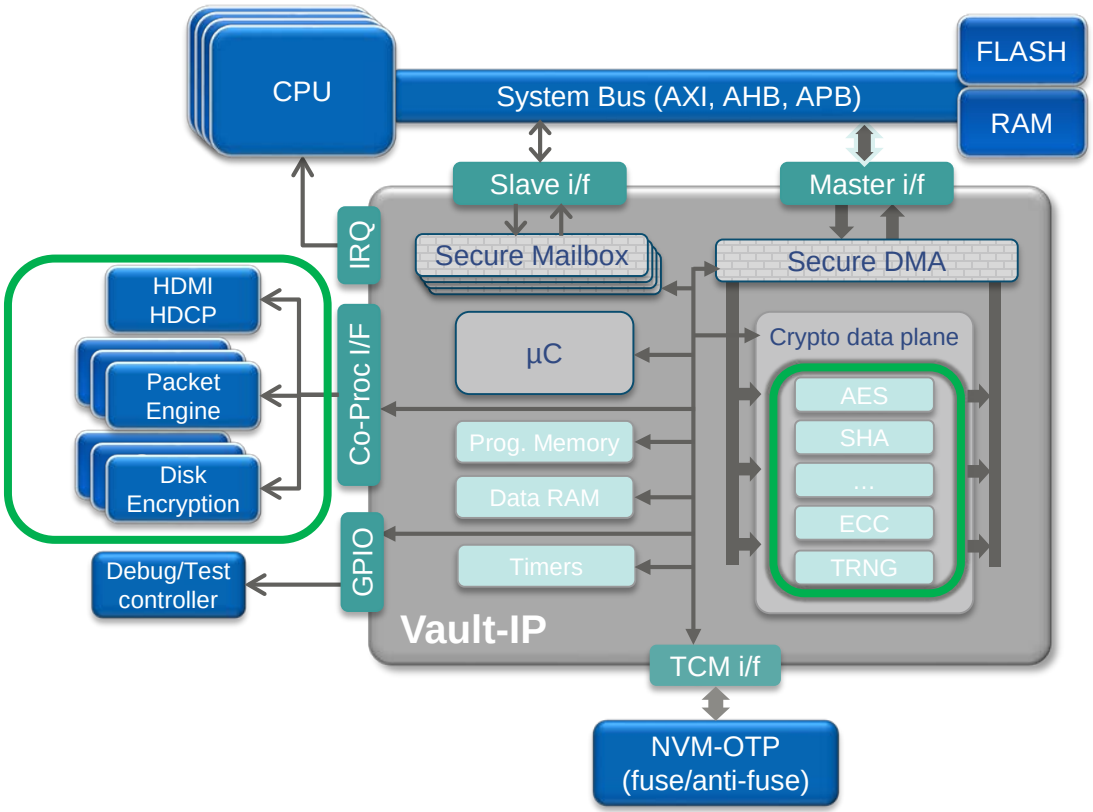
Vault-IP Integration



- FIPS-140-2 level 2 certified
- Side Channel Protection
- Anti Tampering
- HW Protection for keys
  - Even if Kernel breached
  - Anti Cloning
- Scalable Crypto Accelerators
  - Internal and External
- TLS Device Authentication
- Secure debug enablement
- PKCS#11 API – Simplified
  - Easy to integrate
- Built-in provisioning
- Life-cycle management

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NETWORK SECURITY

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Security Challenges in the Network

Solution: Strong encryption, authentication, and platform integrity

2-Way Communication

Rogue or Personal Devices

Gateways / Router

2-Way Communication

Server

Data Management

Take control of the Device or Application

Insert Non-Authorized Devices

Take Control of the Routers/Servers

Man in The Middle: (Are we talking to the expected endpoint?)

- Spy the line
- Hijack network
- Broadcast private information

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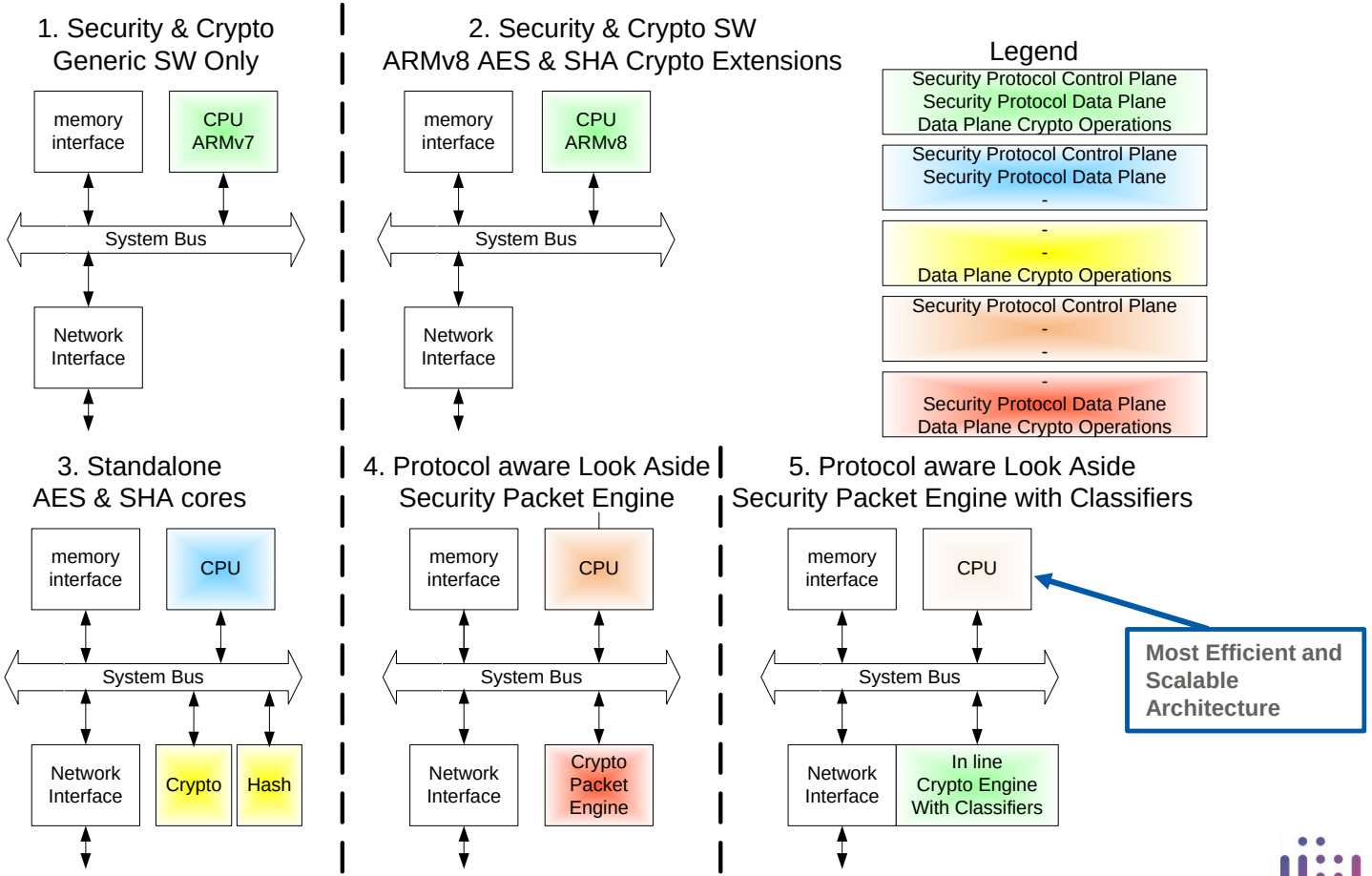
System considerations when selecting a security architecture

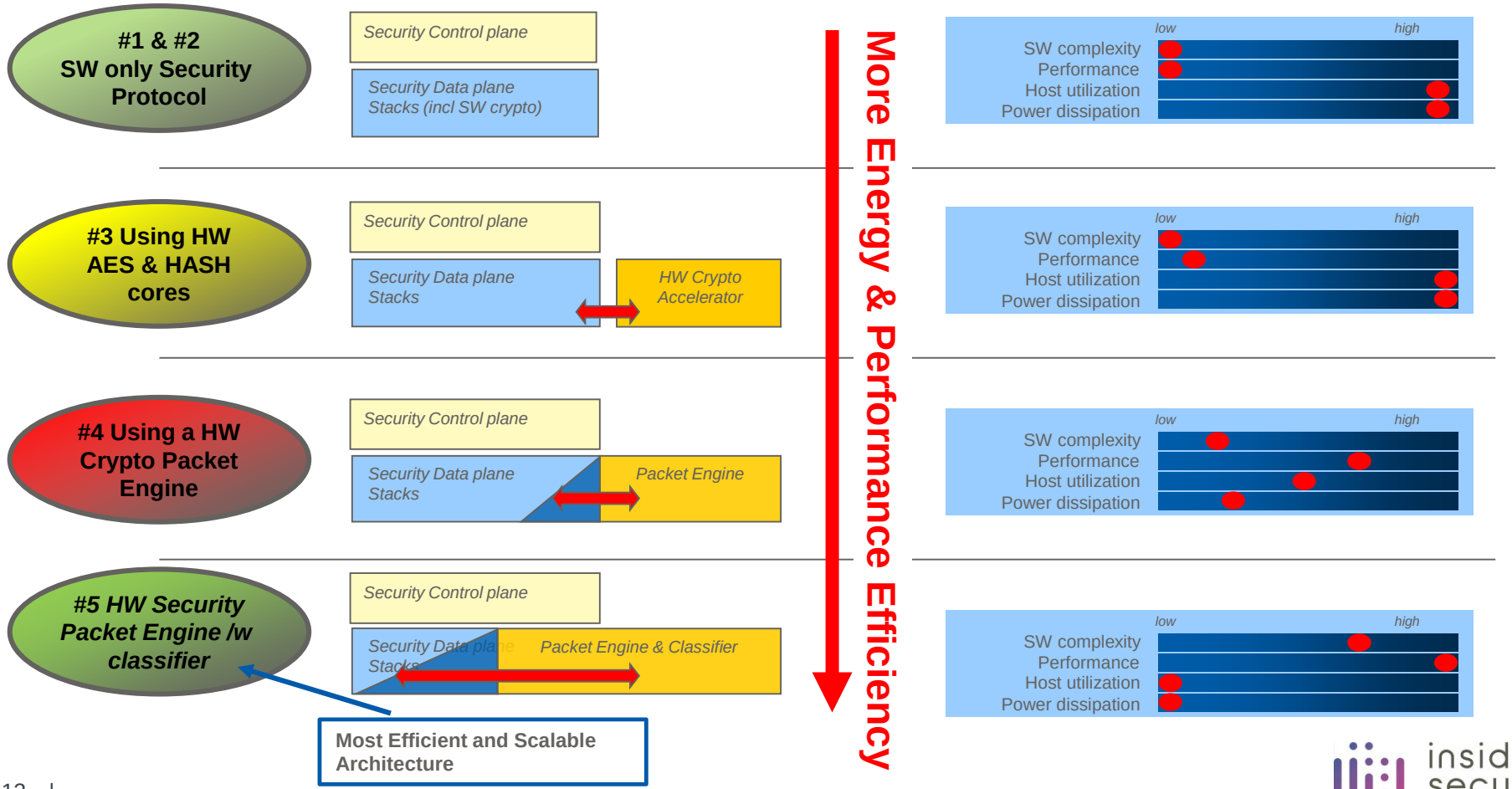
- Security Protocols:
  - Which security protocol will each application use?
    - Examples: IPsec (gateway/gateway), SSL/TLS (client/server), DTLS (client/server) for SSL VPNs, VoIP, and CAPWAP for Wireless AP Provisioning, MACsec (Ethernet)
- Performance:
  - What is the network bandwidth of the device? Do you require line rate security performance?
- CPU Utilization:
  - How compute intensive is the protocol implementation?
    - What is your power budget? (Battery, AC powered?)
    - How many CPU cycles are available for security?
      (Is this a forwarding device or is data initiated/terminated by apps on the local CPUs)
- Application Concurrency
  - Will multiple applications in the system all require security services?
  - Is there a requirement to isolate crypto keys & operations from other applications running in the system?
  - Is there a trusted execution environment present such as ARM TrustZone?

The solution to all these questions is a dedicated HW resource to accelerate all crypto functions

Architectural choices of implementing Security Protocols (IPSEC,SSL/TLS)

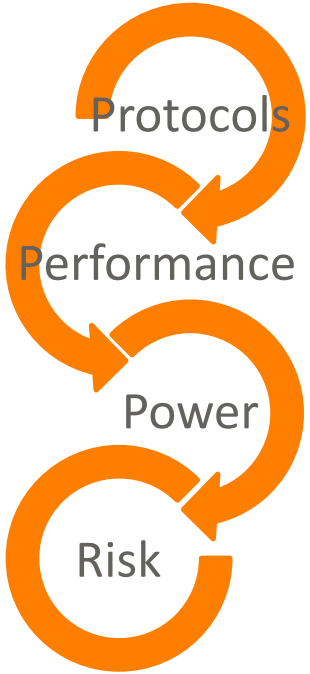


System tradeoffs for each architecture (IPSEC, SSL/TLS)



Why choose inside secure

- Security already pervasive and required
- High speed network systems continue to drive best profits
- Power efficiency lowers cost
- Manufacturers are liable when hacks succeed



SSL/TLS, DTLS, IPSec, MacSec, VPN's, HDCP, DTCP

Hardware acceleration enables the fastest systems

Hardware acceleration decreases power

Effective security keeps your company out of the news

INSIDE Secure has a complete suite of Silicon IP for all your design points, with the available protocol source code for a complete system implementation

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THANK YOU!

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