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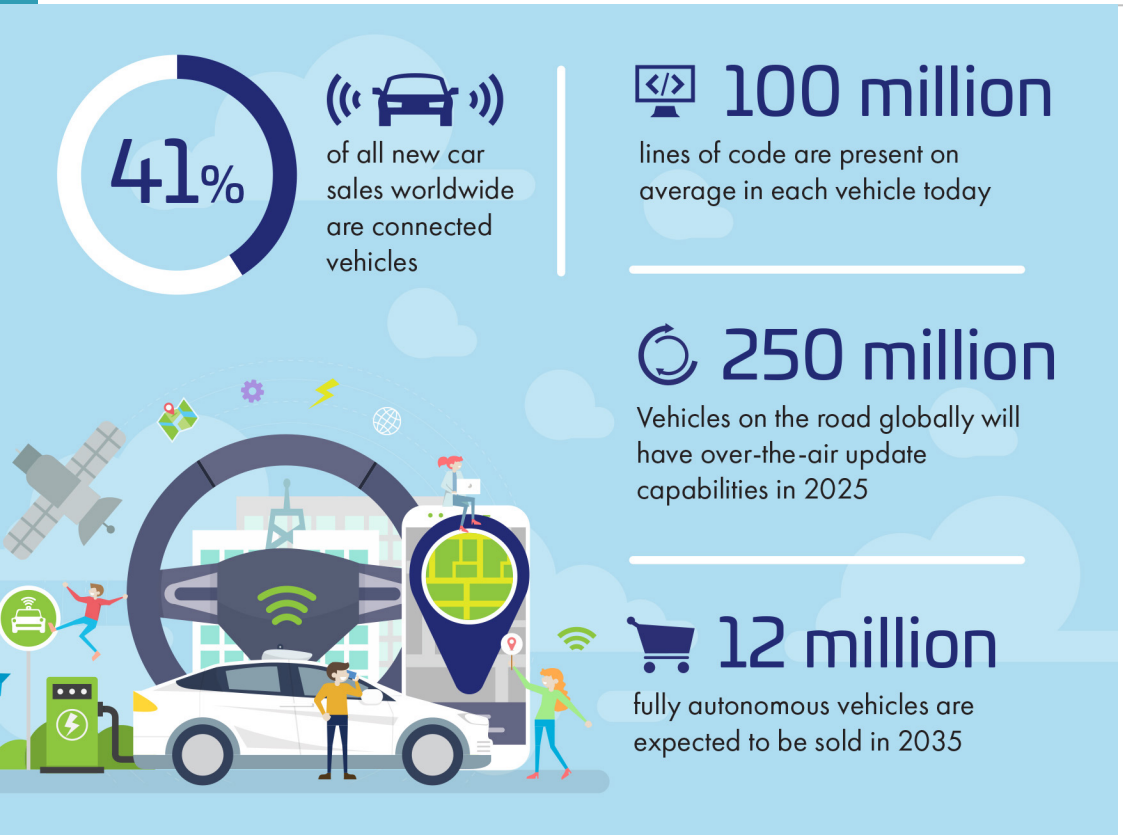
THALES
Building a future we can all trust

Win the connected and autonomous car race while protecting data privacy and intellectual property

eBook



Radical change in the automotive industry



The future has arrived for the automobile industry. We may not yet be flying out of our garages, but our vehicles have come a long way in the past few years.

Most of these advancements are not visible from the outside or even under the hood. Software, connectivity, and computing power are enabling modern innovations, from efficiency to connectivity and autonomous driving.

Today the average vehicle sold has over 100 million lines of software code[1]. Double the lines of the Microsoft Windows operating system. These vehicles are also more connected than ever. 41% of vehicles sold in 2020 are considered "connected," and the number goes to 91% in the United States [2].

And the growth curve is steep. By 2025, 250 Million vehicles will have over-the-air update capabilities, and ultimately analysts expect 12 million fully autonomous vehicles a year to be sold by 2035 [3].

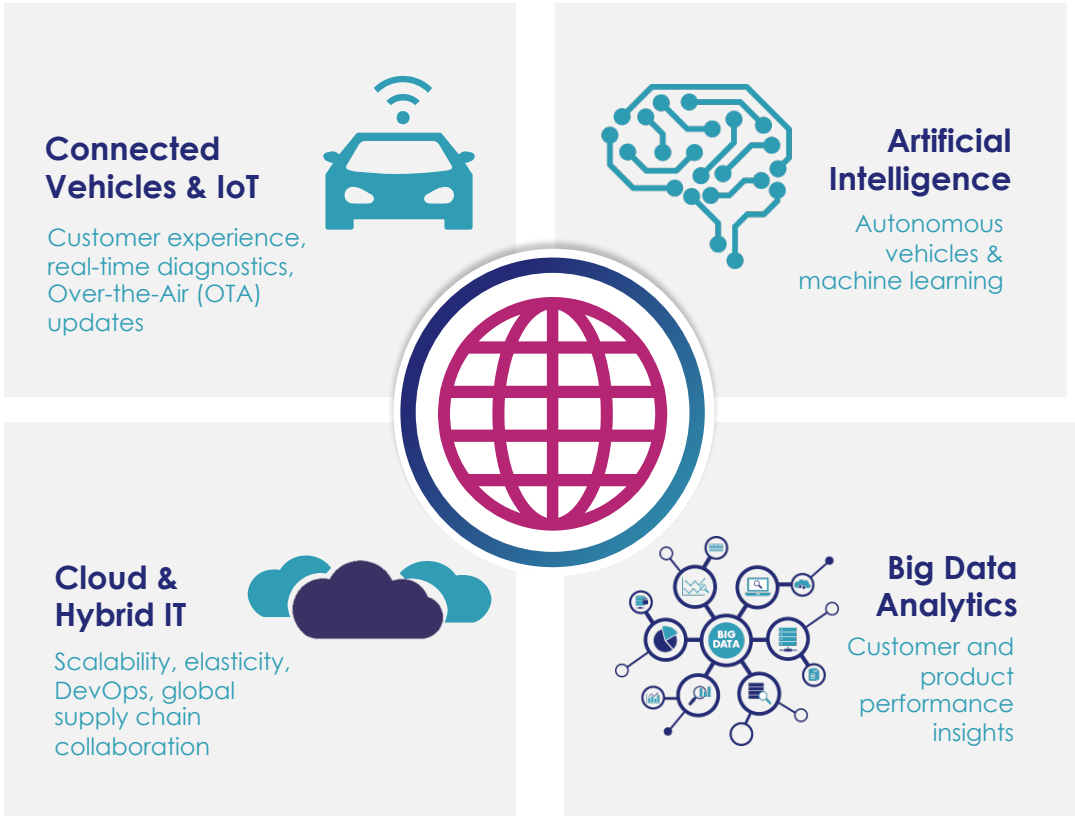
1. *IEEE Spectrum: How Software Is Eating the Car*
2. *ABI Research: The Connected Car Market Will Endure a 15% Shipment Decline*
3. *Boston Consulting Group: Autonomous Vehicle Adoption Study*

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Manufacturers adapt through massive digital transformation

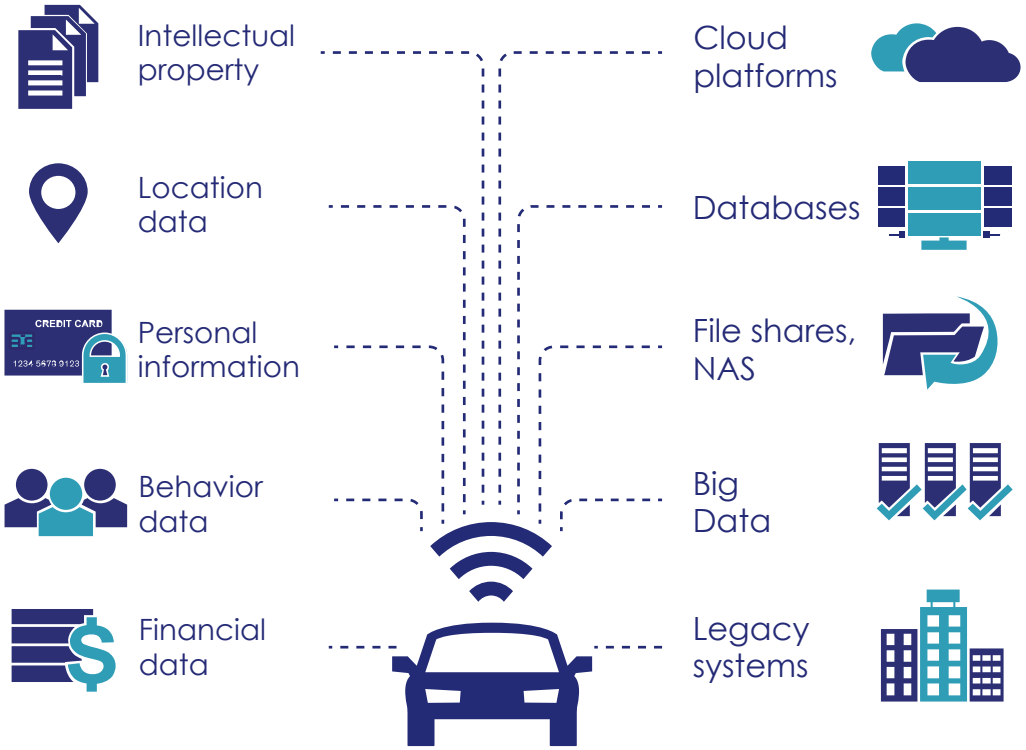
Automobile manufacturers and their supply chain partners have rapidly adopted new technologies to better serve customers and win competitive advantage:

- Embedding high-speed connectivity in vehicles to improve customer experience and entertainment as well as real-time diagnostics and OTA updates.
- Developing artificial intelligence (AI) and machine learning applications for driver assistance or autonomous vehicles.
- Adopting cloud-based workloads for faster DevOps, collaboration with supply chain, and scalability and elasticity of demand.
- Employing big data analytics to gather insights to capitalize on customer behavior, understand product performance, and predict failures.



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Gigabytes of collected data present major opportunities and challenges



The digitalization of the automobile and constant connectivity present automobile manufacturers and mobility companies with major opportunities and challenges.

Manufacturers gain the opportunity to charge for connectivity services through subscriptions and to monetize aggregate customer behavior data. This is the same data-based services model already used by seven of the ten most valuable companies in the world to generate billions in profits.

The challenge is that the increasing amounts of sensitive customer data that provide opportunity to automobile manufacturers also present a growing threat.

Sensitive data captured from connected vehicles can include personal identifiable information (PII), location, behavior, and financial data from customers as well as intellectual property related to the vehicle and services provided.

This sensitive data flows through numerous environments and platforms, both on-premises and in the cloud, and may be accessed by employees and contractors anywhere in the globe. This honeypot of information puts manufacturers at major risk from cyber attacks.

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Connected automobiles raise privacy concerns

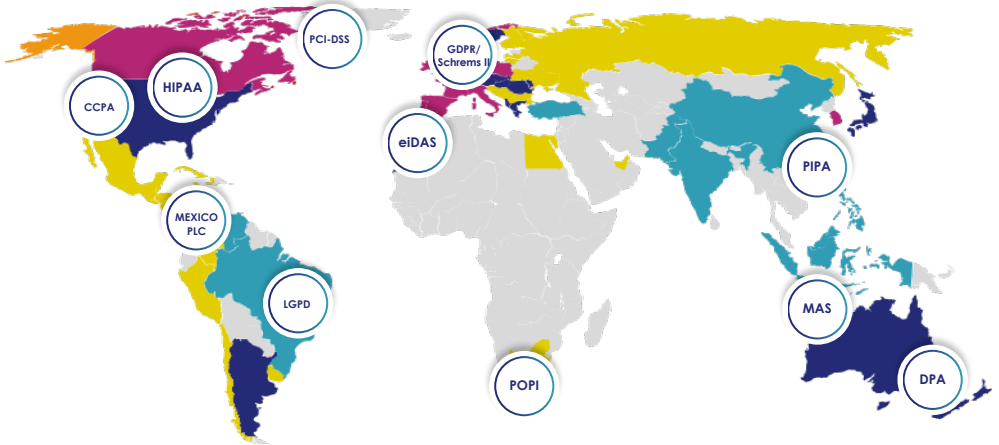
From the beginning of its history, the automobile was seen as a sign of freedom. But 24/7 automotive connectivity generates concerns about the privacy of sensitive data being captured.

Privacy regulations such as GDPR raise the bar for automobile manufacturers and mobility operators, obligating them to protect sensitive personal and financial data, and levying substantial fines if they do not.

Automobile manufacturers and mobility operators find themselves in a difficult situation. The always-on connectivity, digital experience, and data gathering that make the new connected car experience possible are essential to their new business model. Nevertheless, they create major privacy and data protection vulnerabilities.



Expanding # of Data Privacy Regulations



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How Thales Cloud Protection and Licensing can help

Thales enables automobile manufacturers to accelerate digital transformation by reducing risk, complexity, and cost.

Accelerate digital transformation



Adopt innovations such as **cloud, big data, AI, and connected cars** faster with a framework for a zero-trust world

Scale security across enterprise Hybrid IT



Automate and streamline data and **identity protection** with **scalable** solutions for multiple use cases

Reduce risk and complexity



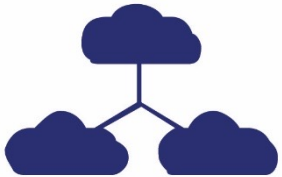
Simplify privacy compliance with centralized data governance and de-identified sensitive data

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Accelerate digital transformation



Digital Keys



Multi-cloud



Connected car and IoT



Artificial intelligence



Big Data

Adopt innovations such as digital keys, cloud, connected car and IoT, AI, and big data **faster with a framework for a zero-trust world**

Secure digital identities, applications, IoT devices, and cryptographic keys with a **certified root of trust**

Protect data in multi-cloud environments with **BYOK, HYOK, BYOE, centralized key management**

Adopt a **zero-trust** posture for all environments with **MFA**, intelligent **SSO**, and **centralized access control**

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Secure OTA fleet management for large commercial vehicle manufacturer

Cloud-based PKI solution to secure innovative fleet over-the-air (OTA)

Challenge



The company had multiple challenges managing **remote truck and bus fleets.**

Needed the ability to run **over-the-air (OTA)** updates to vehicles in the field.

Required **secure unique ID** for each vehicle for control.

Wanted a **cloud-based infrastructure** for future scalability and rapid implementation.

Solution



Implemented a combined solution of **cloud-based PKI management** products.

Thales **Luna Cloud HSM**, part of the **Data Protection on Demand (DPoD)** platform, as the **root of trust for the PKI**.

PrimeKey's EJBCA Cloud as the certificate authority.

Results



Simplified cloud solution achieved **fast and seamless implementation**.

Flexible PKI and HSM functionality can be migrated from the **cloud** to an **on-premises or hybrid** solution.

Solution provides **predictable costs**, **high availability**, and a **scalable** foundation for the near-future **electric** and **self-driving** trucks.

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Accelerated migration to remote work for India's largest auto manufacturer

Fast secure remote work transition for thousands of employees during pandemic

Challenge



Pandemic-forced lockdowns **forced India's largest passenger car maker** to pivot overnight to a **remote working environment**.

Suddenly faced with the challenge of **ensuring secure remote access** to sensitive data and applications in its corporate IT **by 7,500 employees**.

Needed to **quickly implement a robust**, yet easy-to-deploy **Identity and Access Management (IAM)** with strong **multi-factor authentication (MFA).**

Solution



Thales deployed **SafeNet Trusted Access, to centrally manage user access** for both cloud and on-premises applications.

Provided an integrated platform combining **smart single sign-on (SSO), multi-factor authentication,** and **granular-level access policies**.

SafeNet MobilePASS was deployed to offer **next-generation authentication** with passcode (OTP) generation on mobile devices and single tap push authentication.

Results



Achieved rapid deployment and scalability without hardware installation, quickly deploying the solution and making it available for **thousands of VPN users**.

Enabled frictionless user experience and wide adoption with smart single sign-on integrated 'Push OTP' feature, **directly through** their **iOS or Android-powered mobile devices**.

Reduced overall security risk with centralized access management within a **single pane of glass with flexible risk-based policies**, smart single sign-on and diverse authentication methods.

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Scale security across enterprise Hybrid IT



SaaS, PaaS, IaaS services



On-premises legacy systems



File repositories and databases



Secure Manufacturing



Global supply partners

Automate and streamline data and **identity protection** with **scalable** solutions for **multiple use cases**



Centralize key management for **third-party** security solutions across **cloud, hybrid,** and o**n-premises** environments



Minimize the threat of data breach by **de-identifying** all sensitive data on **all new environments and legacy platforms,** including **partners and supplier platforms**



Centralize access management with **single sign on** to all **IaaS, PaaS, SaaS,** and **on-premises** platforms.

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Protection of complex Hybrid IT for European global auto manufacturer

Secure cloud migration, access control, and legacy systems

Challenge



Sensitive data was vulnerable across multiple tenants of **Salesforce** and **Office 365** used by **global subsidiaries**.

Compliance challenges regarding sensitive data stored on several legacy systems including **Windows, Linux,** and **HP UX.**

Weak access control to sensitive internal resources by hundreds of thousands of employees.

Solution



Centralized key management lifecycle with **Ciphertrust Cloud Key Manager (CCKM)** for both Salesforce and Office 365.

Deployed Ciphertrust Transparent Encryption with centralized key management and KMIP connectors to secure data in multiple environments.

Implemented **PKI-based access management** and authentication for employees based on **Luna HSM root-of-trust.**

Results



Improved security in cloud SaaS environments with centralized key management creating data security, while subsidiaries take advantage of cloud services.

Accelerated compliance through centralized enforcement of **granular security policies** applied to data across environments from a single pane of glass.

Secured access to sensitive internal resources with strong PKI-based access management and authentication for **hundreds of thousands** of employees.

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Secure manufacturing for multiple automobile manufacturers in APAC

Secure key distribution platform for automotive industry and global suppliers

Challenge



Secure the supply chain for important car components to **protect it from external hacking, malware, loss of confidential information**.

Needed complete **on-premises control of key management**.

Flexibility to be deploy at **different manufacturers** with **localization** and **customization** for specific customer processes, as needed.

Solution



Implemented **FIPS 140-2 Level 3**-validated **Thales Protect Server HSM as root of trust** for keys.

On-premises deployment through local partners.

Generation of keys on FIPS-validated device supporting **NIST SP800-90 TRNG** and functional module, deploying securely to factories and **injection into automobile ECUs**.

Results



Secure manufacturing with **reliable key lifecycle management** for car components through entire manufacturing operation.

Seamless solution can be deployed **globally** with entire supply chains in both **manufacturing** sites and **external suppliers** in multiple countries.

Flexible PKI and HSM operation through the combination of **on-premises deployment** and **cloud-based key management** as needed to meet the operational requirement.

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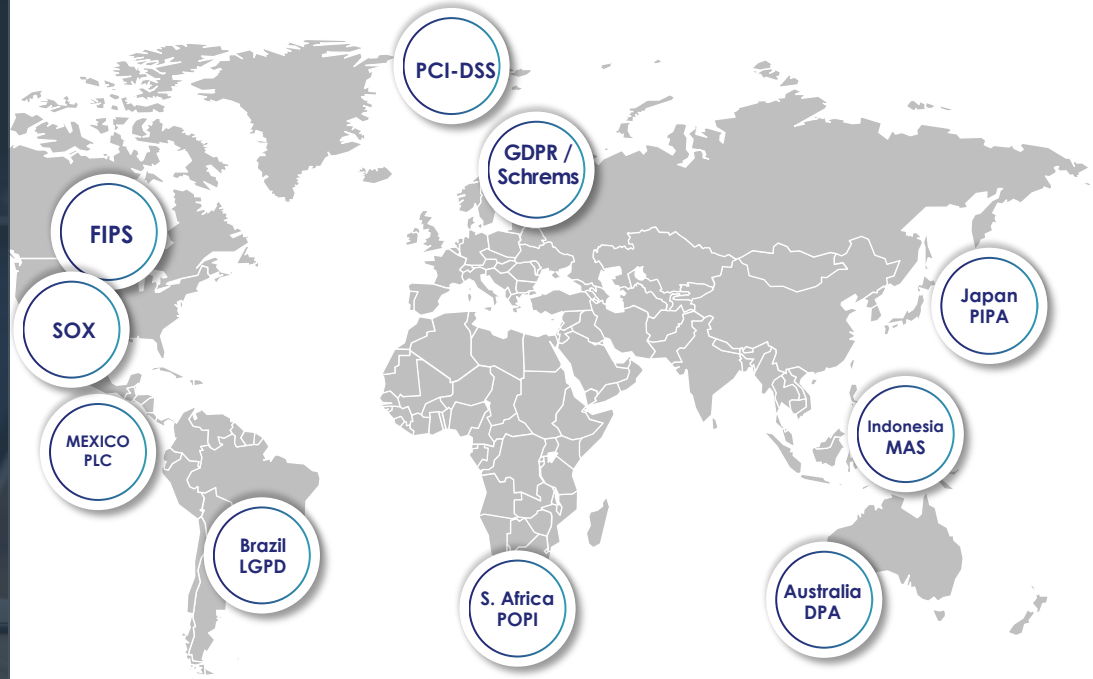
Reduce risk and complexity

Simplify compliance with centralized data and **identity security governance**

Discover and classify data across **hybrid IT** according to sensitivity to **specific** legislation requirements.

Automate data **protection** with **centralized** policy-based enforcement from a single pane of glass.

Apply data **privacy** and **sovereignty** rules through granular **data and access security** controls.



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Financial compliance for US auto manufacturer financial services division

Comply with data protection regulations and secure loan applications

Challenge



Comply with **financial services regulations,** such as PCI, NYDFS, and privacy legislation, such as GDPR.

Protect **financial and personal customer data** in multiple systems throughout the loan process.

Reduce complexity of key management for **multiple third-party** security **platforms.**

Solution



Implemented on-premises **key management** solution to **centralize** and **manage** all encryption keys.

Integrated with all third-party solutions including **Oracle TDE** and **KMIP** connectors.

Luna HSM as root of trust to protect all keys.

Results



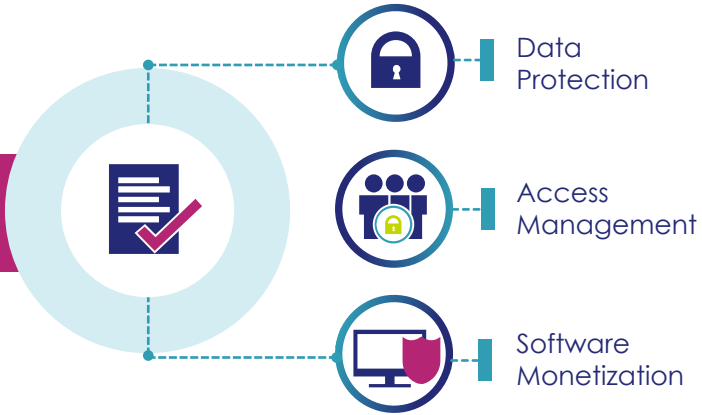
Accelerated compliance through centralized **data security enforcement** across platforms from a **single pane of glass.**

Simplified and highly-secure on-premises key management of **multiple third-party** security platforms **protecting sensitive data throughout the loan** approval process.

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Thales Cloud Protection & Licensing

Our Solutions



#1 Worldwide in general purpose HSMs

#1 Worldwide in payment HSMs

#1 Worldwide in cloud HSMs

#1 Worldwide in data encryption

#1 Worldwide in key management

#2 Worldwide in cloud authentication

#1 Worldwide in software protection

#1 Worldwide in software licensing

Over **2,600** employees

25 Countries Presence

750 Engineers Worldwide

30,000 Customers Worldwide

The people we all rely on to secure their privacy – they rely on Thales

*Thales's technologies and services help secure **more than 80%** of the world's payment transactions and the most valuable corporate and government information*

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About Thales

The people you rely on to protect your privacy rely on Thales to protect their data. When it comes to data security, organizations are faced with an increasing number of decisive moments. Whether the moment is building an encryption strategy, moving to the cloud, or meeting compliance mandates, you can rely on Thales to secure your digital transformation.

Decisive technology for decisive moments.



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Building a future we can all trust

Contact us

For all office locations and contact information,
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