



A Powerful Partnership:  
Microsoft Azure and  
Thales Luna HSMs  
Data security for digital transformation and beyond

# Organizational impact from digital transformation

Cloud capabilities continue to alter businesses across the globe creating changes that directly influence the security community. Underlying trends that have always had an impact, such as new technologies, stricter compliance mandates, and more severe security incidents, continue to cause significant change. The shift to remote work is extending indefinitely in many organizations globally, with many choosing hybrid work environments. This digital transformation affects both small and large organizations who continue to adapt their operational processes to create efficiencies and maximize revenue. The rapid pace and complexity of the changes means many organizations are potentially not adequately or compliantly securing their data; certain types of data require certifications that secures the data through an HSM, traditionally a physical device whose on premise use could seem counterintuitive to the cloud. However, with the right next generation HSM, you can secure your data as it evolves, on-premises, in the cloud, and across hybrid environments.

## Considerations and challenges

Moving your data to the cloud offers many benefits, but as with any change, it must be well thought out and prepared for, especially when it comes to keeping your data secure throughout the process and how you need to incorporate an HSM. Some of these include:

- Operational – what data requires your full control, and what doesn't?
- Access management – who needs to access which data, and how?
- Remote/hybrid work environment – how will the data in its various locations remain protected?
- Security and compliance – how will these change when implementing new technology? How will they be met?
- Location – what data could be secured in the cloud and which in an HSM?

**Reassuringly, Microsoft Azure Dedicated HSM uses Thales HSM technology to address these challenges and deliver a compelling value proposition to users of the service. Let us explore how.**

## Microsoft Azure and Thales Luna HSMs

By default, Azure generates encryption keys on behalf of customers and manages their lifecycle. For many organizations hosting sensitive data in the cloud, they want to enhance their security and control over their encryption keys for compliance or internal security requirements. These organizations want full control over how and when encryption keys protect and access encrypted data or need to follow security best practices. This is how Thales Luna HSMs can help secure your Microsoft Azure environments.

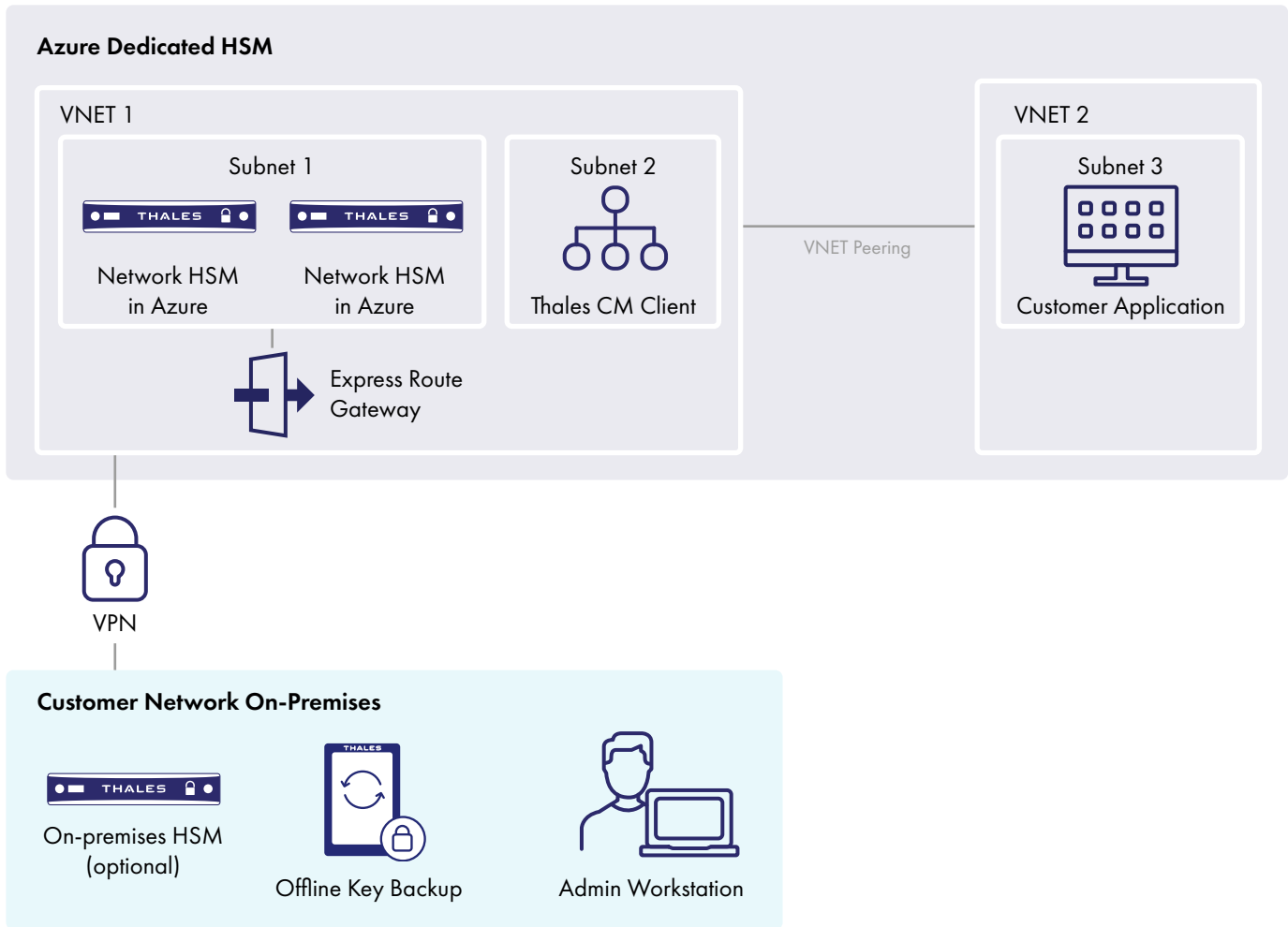
Microsoft, together with Thales Luna HSMs, offers Azure Dedicated HSM for complete data sovereignty. Each customer has access to its own HSM ensuring nobody other than you can access your keys. You manage who in your organization can access your HSMs and the scope and assignment of their roles. You can easily store and manage cryptographic keys separate from sensitive data, enhancing encryption key control and data security in the Azure Cloud.

With Luna HSMs, you can:

- Generate and store cryptographic keys
- Establish a common root of trust across applications and services
- Encrypt and decrypt data encryption keys
- Protect secrets (passwords, SSH keys, etc.)
- Isolate keys and signing operations from certificate authorities, host platforms, and operating systems
- Automate key lifecycle control and processes

### Glossary

HSM	Hardware Security Module
SSH	Secure Shell
PKI	Public Key Infrastructure
IoT	Internet of Things
FIPS	Federal Information Processing Standards
eIDAS	Electronic Identification, Authentication, and trust Services
EAL	Evaluation Assurance Level
ID	Identification
SSL	Security Sockets Layer
TLS	Transport Layer Security
API	Application Programming Interface



# Benefits

## Peace of Mind

Create, manage, and store your keys in a tamper-proof root of trust, where your keys never leave in plain text form.

## Compliant

Ensure global compliance and best standards by storing and managing your keys in a FIPS 140-2 Level 3 and eIDAS Common Criteria EAL4+ validated HSM.

## Key Control

You have full administrative and cryptographic control over your HSMs. Only you have access to and visibility into the keys stored in the HSMs.

## Flexibility

Easily migrate applications to Azure due to the Luna HSM compatibility with many applications, whether legacy or custom thanks to its hybrid capability.

## Scalability

Scale your business and continue your digital transformation by leveraging technology in the cloud.

## Disaster Recovery

Ensure business continuity by keeping a secure copy of key in your possession.

# Typical Use Cases

Thales Luna HSMs can be used for any use case, any application, any industry, and any environment. Some common uses are:

- 5G
- Code signing
- Blockchain
- IoT
- PKI
- Quantum
- Remote signing
- SSL/TLS
- ID's for Manufacturing
- Cloud key ownership
- DevOps

For highly regulated industries such as **financial services**, **government**, and **healthcare**, their sensitive data requires the highest level of control and security. Enhanced data protection from HSMs enables organizations to benefit from the full power of Microsoft 365 collaboration and productivity tools while protecting sensitive data and meeting data privacy regulations and requirements.

## Suitability

Customers choose Azure Dedicated HSM when they have a requirement for single tenancy of a cryptographic storage device because they need or want full administrative control and sole access to their HSM. This service provisions a physical device from one of Microsoft's globally distributed datacenters. They can be easily provisioned as a pair of devices and configured for high availability. HSM devices can also be provisioned across regions to assure against regional-level failover. After they're provisioned, HSM devices are connected directly to a customer's virtual network. Then you become a true single-tenant with full administrative control and application-management capability.

Thales Luna HSMs were selected because of its broad range of cryptographic algorithm support, a variety of supported operating systems, and broad API support. Its superior performance, 10 partitions out of the box and ability to support up to 100 partitions per device ensure low latency, high capacity and high throughput.

Learn more about Azure Dedicated HSM at [Dedicated HSM - Hardware Security Module | Microsoft Azure](#) or at [Azure Dedicated HSM | Microsoft Docs](#). Or simply contact your Microsoft or Thales advisor to schedule an assessment with a team of experts that will help to assess, plan, and implement the best solution.

## About Thales Luna HSMs

Thales Luna HSMs have led the market for more than 25 years, and are the foundation of digital security for traditional and emerging technologies across all environments, including hybrid, multi-cloud. Affording you the flexibility to meet your business needs and compliance needs securely and efficiently, Thales provides a high assurance, FIPS 140-2 Level 3 HSM for any use case, any application, any industry, and any environment.





## About Microsoft Azure

The Azure cloud platform is more than 200 products and cloud services designed to help you bring new solutions to life – to solve today's challenges and create the future. Build, run and manage applications across multiple clouds, on-premises and at the edge, with the tools and frameworks of your choice.

## 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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