



**ENTRUST**



# Protect Sensitive Data with Format-Preserving Encryption and Data Masking

Entrust tokenization protects sensitive data with format-preserving encryption and data masking

## HIGHLIGHTS

- Pseudonymizes and masks sensitive data while maintaining data format
- Vault-less tokenization approach
- Binary data encryption using AES-256
- RESTful API enables integration of multiple programming language environments and reduces development effort and lead time
- Strong key protection using FIPS 140-2 and Common Criteria certified nShield® HSMs (Supporting module, softcard, and OCS key protection)
- Supports multiple character sets, (including alphanumeric, numeric, Chinese, Japanese, Korean, Thai, and Vietnamese) and check digit algorithms (including credit card luhn algorithm check, national ID/ passport number)
- Supports OpenAPI Specification (OAS) integration and highly-scalable microservices architecture

## The challenge: pseudonymize and mask data while preserving format

Enterprises need to protect sensitive data and reduce the scope of compliance audits by obfuscating data, so it is meaningless to anyone

who might steal it. However, these enterprises frequently need to maintain the format of the data, so they can work with it in ways that don't require some or all of the data in clear text. Traditional data encryption cannot preserve the data's original format or support data masking.

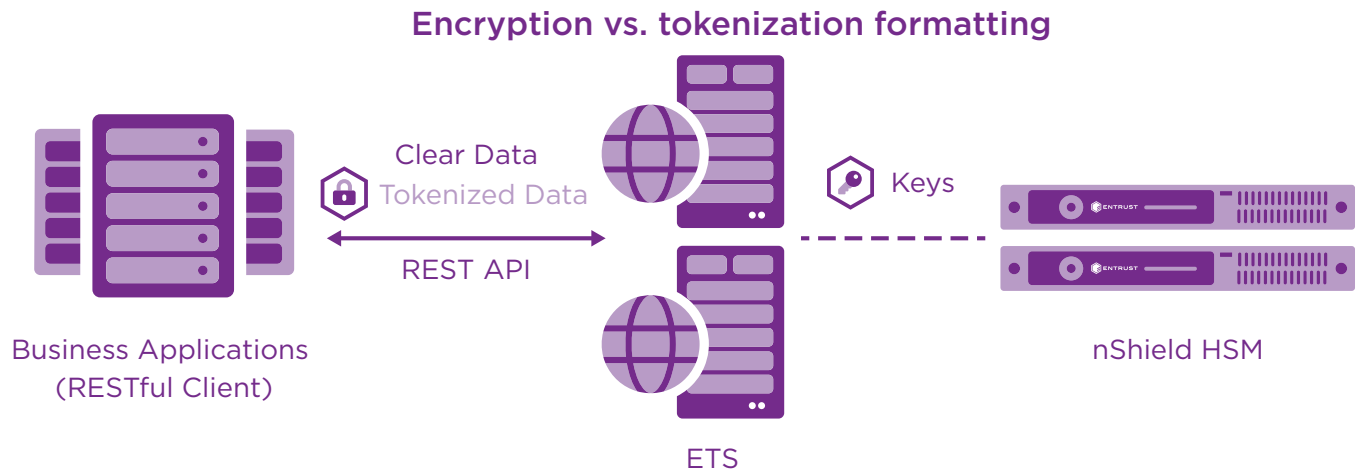
## The solution: Entrust tokenization

The Entrust tokenization solution can pseudonymize data while preserving its original format and supporting data masking. Tokenization is particularly useful for cloud applications, because data can be tokenized before being sent to the cloud. This helps data owners maintain agility while complying with personal data protection regulations.

The Entrust tokenization solution, delivered by the Entrust Professional Services team, converts plain text data to format-preserving tokens that cannot be traced back to the original data except through secure de-tokenization. The underpinning cryptographic keys are protected by FIPS 140-2 and Common Criteria certified Entrust nShield® hardware security modules (HSMs), and the solution is designed to fulfill the compliance requirements of personal data protection laws. The Entrust tokenization solution supports nShield HSM module, softcard, and OCS key protection options

**Learn more at [entrust.com/HSM](https://entrust.com/HSM)**

# Protect Sensitive Data with Format-Preserving Encryption and Data Masking



Plain text data is converted to format-preserving tokens with the underpinning cryptographic keys protected by certified nShield HSMs

The solution supports masking for instances where users and processes need to export data to third parties where sensitive information can be masked for privacy purposes.

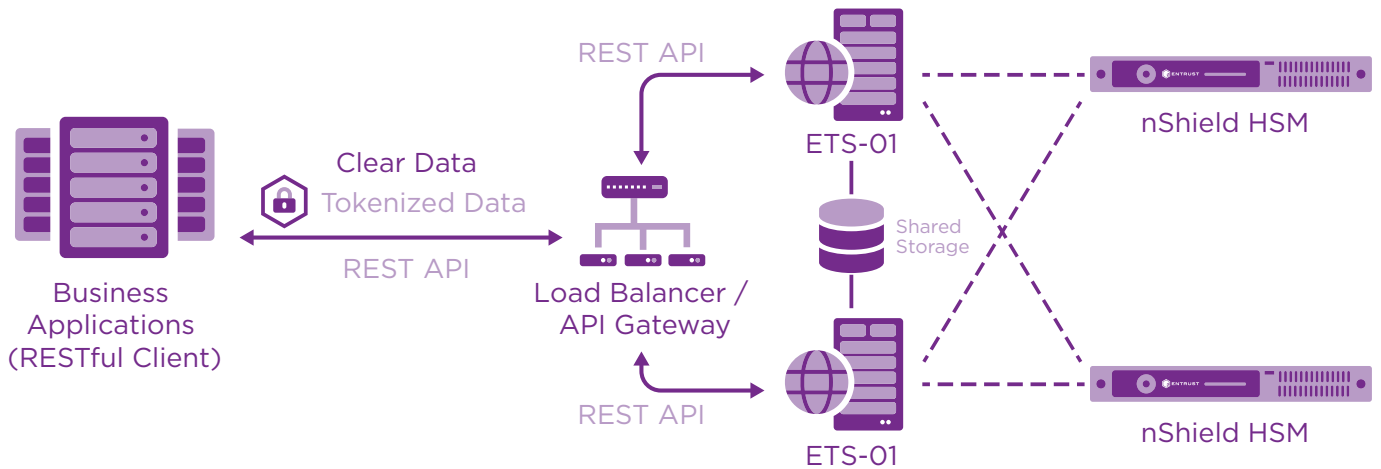
The Entrust tokenization solution is a RESTful web service running on both Windows and Linux platforms. Administrators can configure tokenization profiles with a web UI, and application developers can integrate the solution with RESTful APIs. Implemented as a microservice, the solution is a self-contained package that is simple to deploy, manage, and maintain, and provides performance and scalability to an unlimited number of servers.

As an additional security control, the solution provides detailed logging of common operations (e.g. tokenization, de-tokenization, masking, etc.) as well as audit logging for critical operations (e.g. failure attempt or amending tokenization settings).

## Cloud-ready application

The Entrust tokenization solution is a cloud-ready application. Thanks to the microservice architecture, it requires minimal resources to put into operation. Making it easy to scale up the performance by assigning more system resources (e.g. CPU cores). With the help of a load balancer/API gateway, multiple instances of ETS can be built as a cluster to serve REST API requests. The solution also integrates with nShield Container Option Pack to address containerized environments.

# Protect Sensitive Data with Format-Preserving Encryption and Data Masking



Using the microservice architecture, the tokenization solution requires minimal resources to be operated in the cloud

## The Entrust Professional Services difference

With decades of experience, the Entrust Professional Services team offers unmatched expertise in designing and implementing crypto applications for the world's most security-conscious organizations. Entrust Professional Services consultants work closely with clients to design and deploy the right solution for their unique environments and to leave their teams with the knowledge to maintain it for years to come.

## Learn more

To find out more about Entrust nShield HSMs visit [entrust.com/HSM](https://www.entrust.com/HSM). To learn more about Entrust's digital security solutions for identities, access, communications, and data visit [entrust.com](https://www.entrust.com)

To find out more about  
Entrust nShield HSMs

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**entrust.com/HSM**

## ABOUT ENTRUST CORPORATION

Entrust keeps the world moving safely by enabling trusted experiences for identities, payments, and digital infrastructure. We offer an unmatched breadth of solutions that are critical to enabling trust for multi-cloud deployments, mobile identities, hybrid work, machine identity, electronic signatures, encryption, and more. With more than 2,800 colleagues, a network of global partners, and customers in over 150 countries, it's no wonder the world's most entrusted organizations trust us.

Learn more at  
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