THALES

SafeNet Authentication Service

INTEGRATION GUIDE
THALES LUNA HSM

Document Information

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Overview

This document provides you the steps for integrating SafeNet Authentication Service (SAS) with a Luna HSM. It demonstrates how to configure a SafeNet Authentication Service (SAS) to secure the AES encryption key within a Luna HSM. Thales Luna HSM is an external hardware security module that is available for use with SafeNet Authentication Service (SAS). Luna HSM with SAS is used to secure encryption keys that protect sensitive data. Multiple Luna HSMs can be configured as a High Availability (HA) group with SAS that ensure the availability of encryption keys.

The benefits of using a Luna HSM to generate the encryption key to protect sensitive data for SafeNet Authentication Service (SAS) include:

- Ensuring secure key generation, storage, and protection through FIPS 140-2 level 3 validated hardware.
- Providing full life cycle management of the keys.
- Maintaining an audit trail through HSM.
- Achieving significant performance enhancements by offloading cryptographic operations from application servers.

Supported Platforms

The following platforms are certified for integrating SafeNet Authentication Service with Luna Cloud HSM:

Platforms Tested	SafeNet Authentication Service (SAS)
Windows Server 2022 Datacenter Windows Server 2019 Standard	SAS PCE/SPE 3.18
Windows Server 2016 Standard	SAS PCE/SPE 3.10.1
Windows Server 2016 Standard	SAS PCE/SPE 3.8.1

NOTE: This integration will work properly and be compatible with any Luna HSM device, provided the Luna HSM device is supported and used in conjunction with a compatible Luna Client.

Luna HSM: Luna HSM appliances are purposefully designed to provide a balance of security, high performance, and usability that makes them an ideal choice for enterprise, financial, and government organizations. Luna HSMs physically and logically secure cryptographic keys and accelerate cryptographic processing. Luna HSM on premise offerings include the Luna Network HSM, Luna PCIe HSM, and Luna USB HSMs. Luna HSMs are also available as an offering from cloud service providers such as IBM cloud HSM and AWS cloud HSM classic.

Prerequisites

Before you proceed with the integration, complete the following tasks:

Configure Luna HSM

If you are using a Luna HSM, ensure the following:

1. Ensure the HSM is set up, initialized, provisioned, and ready for deployment. Refer to the Luna HSM Documentation for more information.
2. Create a partition on the Luna HSM for use with SafeNet Authentication Service (SAS).
3. If you are using a Luna Network HSM, register a client for the system and assign the client to each partition to create an NTLS connection for the three partitions. Initialize the Crypto Officer and Crypto User roles for each registered partition.
4. Ensure that each partition is successfully registered and configured. The command to see the registered partitions is:

```
C:\Program Files\SafeNet\LunaClient>lunacm.exe

lunacm (64-bit) v10.2.0-111. Copyright (c) 2020 SafeNet. All rights
reserved.


        Available HSMs:
        Slot Id ->              0
        Label ->                SAS_PCE_Par
        Serial Number ->        1238696045103
        Model ->                LunaSA 7.4.0
        Firmware Version ->     7.4.0
        Configuration ->        Luna User Partition With SO (PW) Key Export
        with Cloning Mode
        Slot Description ->     Net Token Slot
        FM HW Status ->         FM Ready
        Current Slot Id: 0
```

5. For PED-authenticated HSM, enable partition policies 22 and 23 to allow activation and auto-activation.

> **NOTE:** Follow the Luna HSM documentation for detailed steps for creating NTLS connection, initializing the partitions, and various user roles.

Configuring Luna HSM HA (High-Availability)

Please refer to the Luna HSM documentation for HA steps and details regarding configuring and setting up two or more HSM appliances on Windows and UNIX systems. You must enable the HAOnly setting in HA for failover to work so that if primary stop functioning for some reason, all calls automatically routed to secondary till primary starts functioning again.

> **NOTE:** This integration is tested in both HA and FIPS mode.

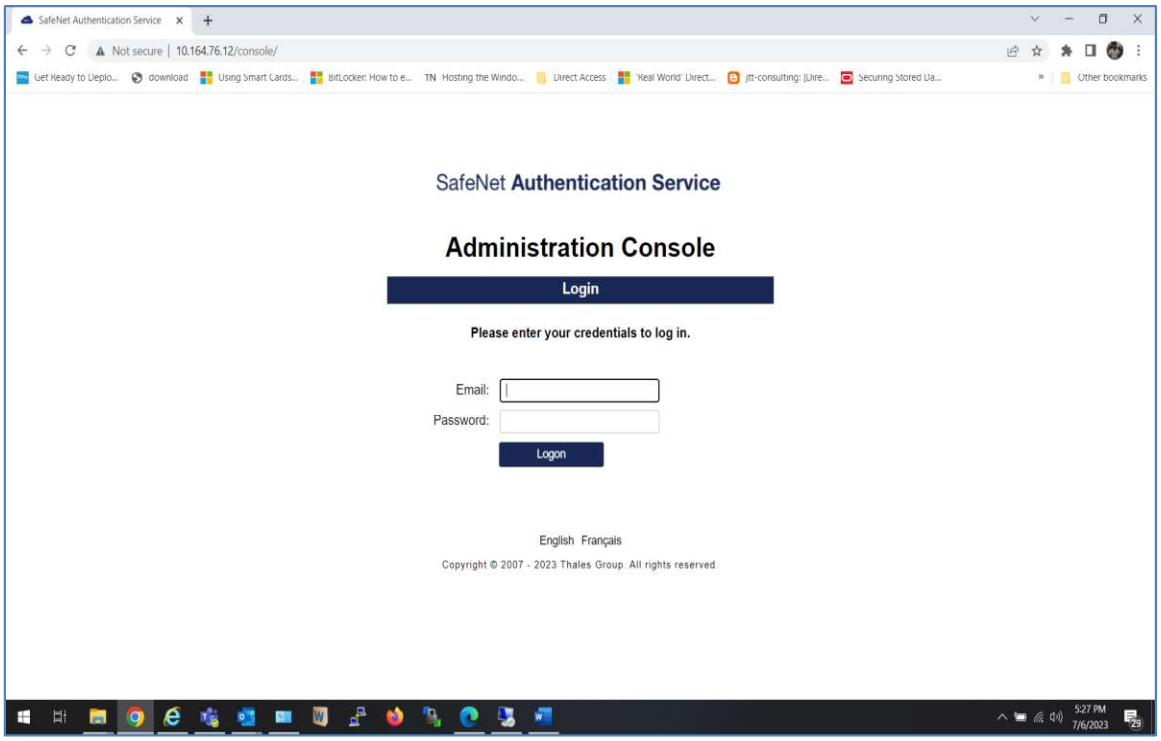
Set up SafeNet Authentication Service (SAS)

For detailed instructions on installing and configuring the SafeNet Authentication Service (SAS), please consult the official SAS Documentation. To download the SAS software, visit the Thales support site by following the provided link:

https://supportportal.thalesgroup.com/csm

Once the installation is complete, verify the successful operation of the SAS service by accessing the following URL:

http://<hostname or IP address>/console



Configuring Luna HSM for SafeNet Authentication Service

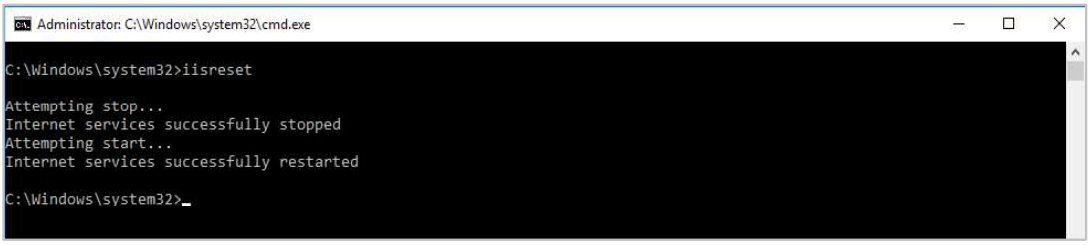
This integration assumes that SAS is installed and running. Complete the following steps to configure the Luna HSM with SAS.

> **NOTE:** For existing SAS setups, the untouched data is not encrypted till a modification call is made. Once the data is modified, the HSM encryption is applied to it. Any existing data will remain unencrypted until it is changed.

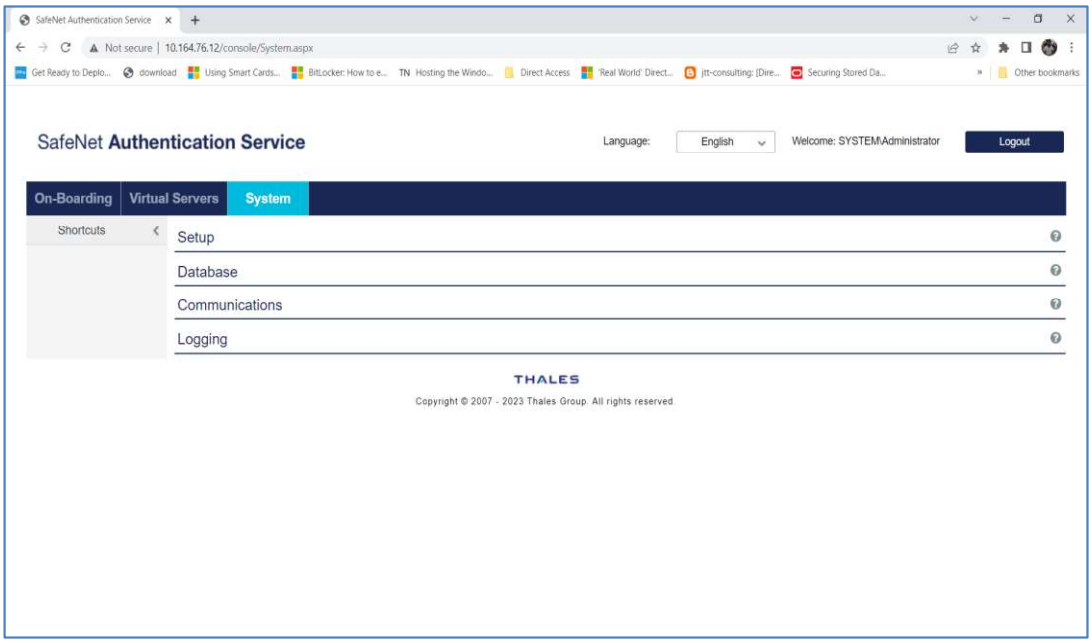
To configure Luna HSM for SafeNet Authentication Service:

1. Login to the system as an Administrator where SAS is running.
2. Copy the **cryptoki.dll** from **C:\Program Files\SafeNet\LunaClient** folder to the **C:\Windows\System32** folder.

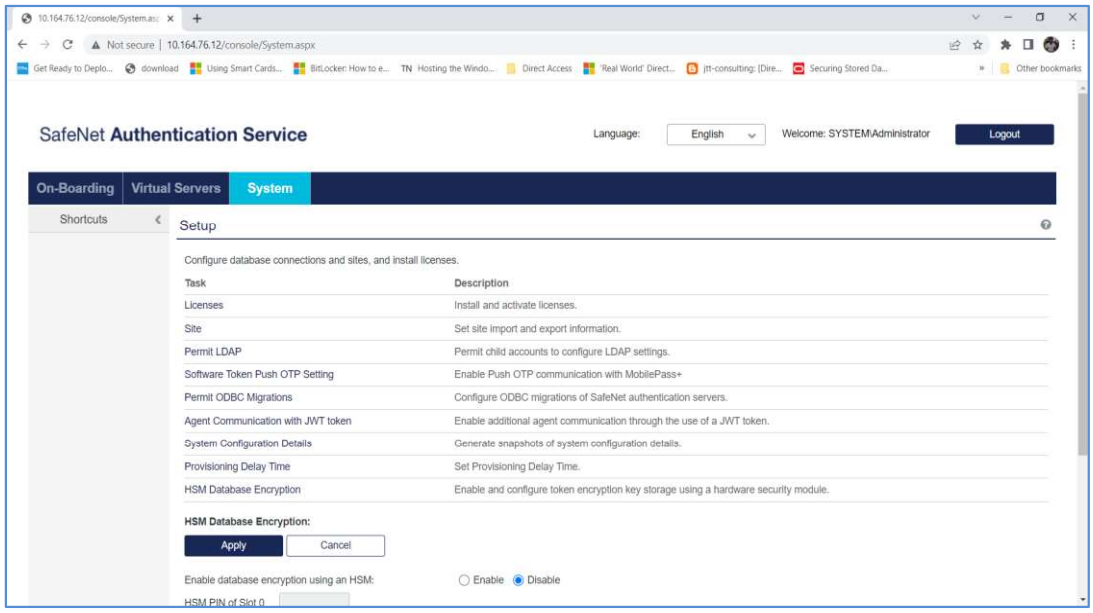
3. Open the command prompt and run the **iisreset** command to reset IIS.



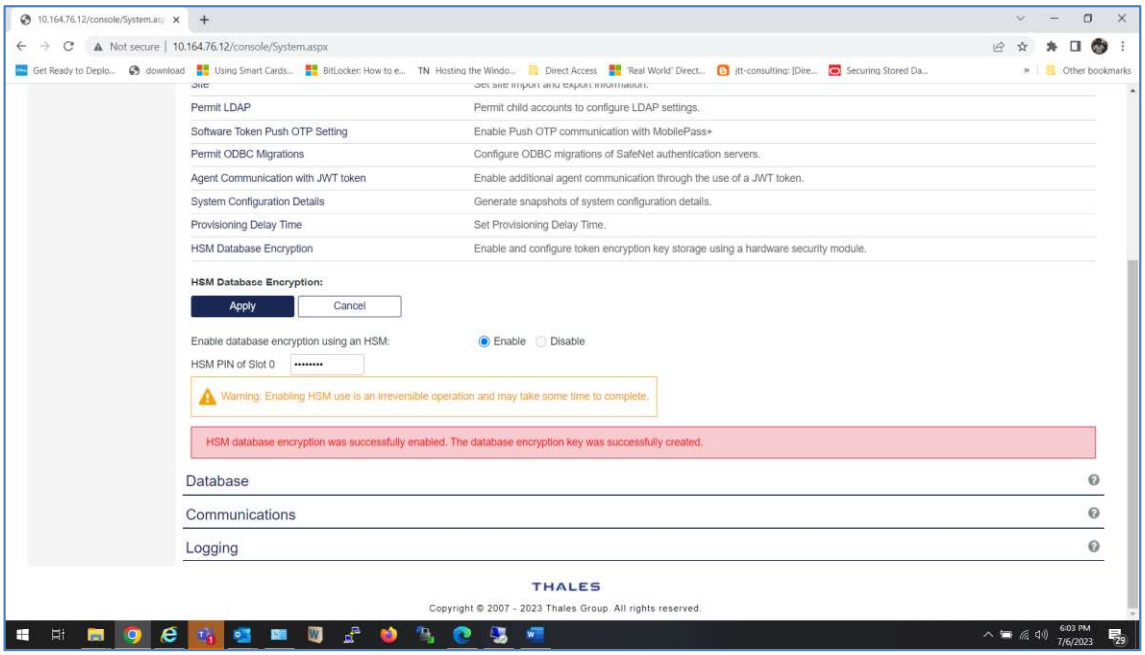
4. Launch SAS Manager Console and log in to the SAS Manager Console as an Administrator. https://<hostname or IP address>/console



5. Navigate to **System** > **Setup** > **HSM Database Encryption**.



6. Click **Enable** to **Enable database encryption using an HSM**.
7. Enter the Crypto Officer PIN of the HSM partition in the **HSM PIN of Slot 0** input field.
8. Click the **Apply** button. You will see the following message: **HSM database encryption was successfully enabled. The database encryption key was successfully created.** In case a key is already present in the HSM or in the case of a PIN update, an appropriate message will be displayed.



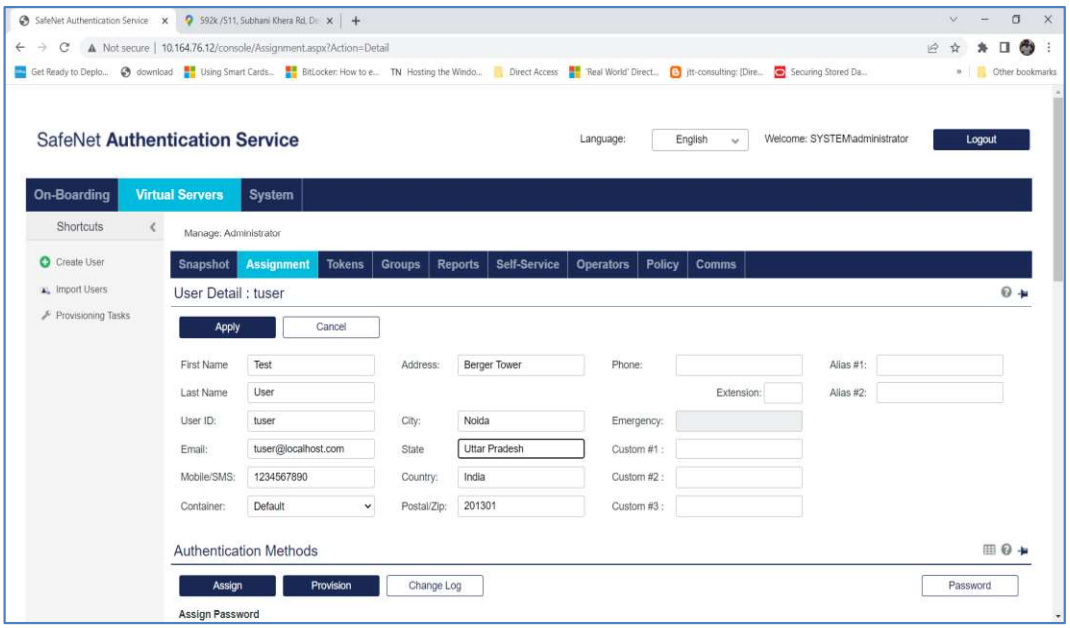
NOTE: If the AES key with Label: HSM_KEY_AES_ENCRYPTION_VER_13 exists in Luna HSM partition, then it will use the existing key. If there is no key with this label, it will generate a new key.

9. Verify that the key is being created. To view the key created on Luna HSM partition, run the “cmu list” command.

Verifying Encryption on SafeNet Authentication Service

To verify encryption on SafeNet Authentication Service:

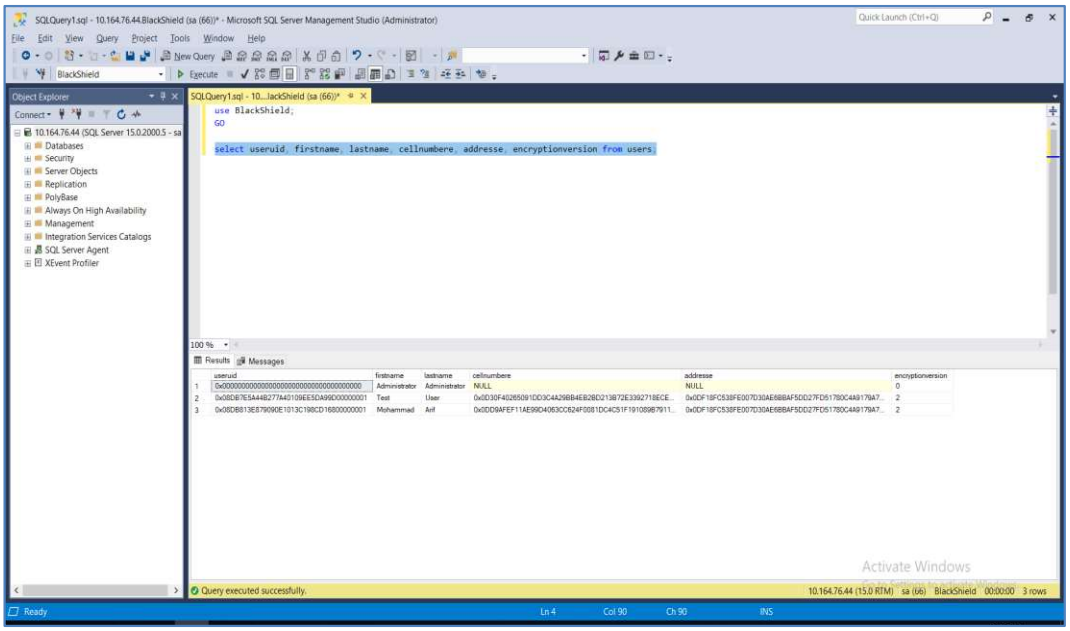
1. Create a new user or update the information of an existing user.



2. Check the value of the **encryptionVersion** column in SAS database by executing the following query:

```
# select useruid, firstname, lastname, cellnumbere, addresse, encryptionversion
from users;
```

If the value of the **encryptionVersion** column is set to **2**, it indicates that the encryption has been successfully implemented.



The integration of the Luna HSM with SafeNet Authentication Service is now finalized as the SafeNet Authentication Service employs the Luna HSM key for encrypting all sensitive data.

Contacting Customer Support

If you encounter a problem while installing, registering, or operating this product, refer to the documentation. If you cannot resolve the issue, contact your supplier or Thales Customer Support. Thales Customer Support operates 24 hours a day, 7 days a week. Your level of access to this service is governed by the support plan arrangements made between Thales and your organization. Please consult this support plan for further information about your entitlements, including the hours when telephone support is available to you.

Customer Support Portal

The Customer Support Portal, at https://supportportal.thalesgroup.com, is a database where you can find solutions for most common problems. The Customer Support Portal is a comprehensive, fully searchable repository of support resources, including software and firmware downloads, release notes listing known problems and workarounds, a knowledge base, FAQs, product documentation, technical notes, and more. You can also use the portal to create and manage support cases.

> **NOTE:** You require an account to access the Customer Support Portal. To create a new account, go to the portal and click on the **REGISTER** link.

Telephone Support

If you have an urgent problem, or cannot access the Customer Support Portal, you can contact Thales Customer Support by telephone at +1 410-931-7520. Additional local telephone support numbers are listed on the support portal.