

Lieberman Software ERPM Integration Guide



THE
DATA
PROTECTION
COMPANY

Document Information

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Limitations

This document does not include the steps to set up the third-party software. The steps given in this document must be modified accordingly. Refer to Luna SA documentation for general Luna setup procedures.

Disclaimer

The foregoing integration was performed and tested only with the specific versions of equipment and software and only in the configuration indicated. If your setup matches exactly, you should expect no trouble, and Customer Support can assist with any missteps. If your setup differs, then the foregoing is merely a template and you will need to adjust the instructions to fit your situation. Customer Support will attempt to assist, but cannot guarantee success in setups that we have not tested.

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Contents

CHAPTER 1 Introduction.....	5
Scope	6
Prerequisites.....	7
CHAPTER 2 Integrating Lieberman ERPM with Luna HSM.....	8
Configuring the ERPM to use keys from Luna HSM.....	8

CHAPTER 1

Introduction

This document outlines the steps to configure and integrate Lieberman Software ERPM with Luna HSM.

Enterprise Random Password Manager (ERPM) is a privilege management platform that protects organizations against advanced persistent threats (APTs) and other sophisticated cyber-attacks. It ensures that powerful privileged identities are only available to audited users on a temporary, delegated basis - preventing unauthorized and anonymous access to systems with sensitive data.

This strategic privilege management solution is designed to improve the efficiency of your IT operations. It leads the market in automation to better address the complex shared account problems found in every enterprise.

Privilege Management Platform

- True DiscoverySM continuous auto-discovery
- Privileged account usage and propagation
- Centralized privileged access management
- Programmatic orchestration and automation
- Encrypted password data store



Systems, Network Devices, Databases, and Applications
Deploy On-Premises, In the Cloud, or Both

Privileged
Identity
Management

Privileged
Access
Management

Session
Recording

App-to-App
Password
Management

Service
Account
Management

Compliance Reporting and Visualization Dashboards

ERPM secures privileged identities throughout your IT infrastructure, including:

Super-user login accounts utilized by individuals to change configuration settings run programs and perform other IT administrative duties.

Service accounts that require privileged login IDs and passwords to run.

As this privilege management product continuously tracks privileged accounts on your network, it changes each account's password to a unique and complex value. ERPM then deploys the password changes wherever they are used, and grants fast, audited access for authorized IT staff.

ERPM can help you eliminate the shared credentials that attackers exploit to gain lateral access within networks. Even if an attacker obtains a user name and password, the information is of little value because ERPM makes each privileged password unique, and frequently changes each password. Disclosed credentials are randomized immediately after use, so no one retains long-term knowledge of password secrets and every request for access is attributed to an individual.

Lieberman ERPM will use the encryption keys stored on Luna HSM. The SafeNet Luna HSM (Hardware Security Module) secures the ERPM encryption keys within an industry standard FIPS 140-2 level 3 validated HSM.

Scope

3rd Party Application Details

- Lieberman Software ERPM v4.83.8

Supported Platforms

- Windows Server 2012 R2

HSMs and Firmware Version

Lieberman ERPM has been tested with the following:

- Luna SA f/w 6.21.0 with Luna Client s/w v5.4.1 (32 bit)

Prerequisites

Luna SA Setup

Please refer to the Luna SA documentation for installation steps and details regarding configuring and setting up the box on Windows systems. Before you get started ensure the following:

- Luna SA appliance and a secure admin password.
- Luna SA, and a hostname, suitable for your network.
- Luna SA network parameters are set to work with your network.
- Initialize the HSM on the Luna SA appliance
- Create and exchange certificates between the Luna SA and your "Client" system (registered the Client with the Partition).
- Create a partition on the HSM and remember the partition password that will be use later.
- Register the Client with the partition. And run the "vtl verify" command on the client system to display a partition from Luna SA. The general form of command is "C:\Program Files\SafeNet\LunaClient\vtl verify".
- Enable Partition "Activation" and "Auto Activation" (Partition policy settings 22 and 23 (applies to Luna SA with Trusted Path Authentication [which is FIPS 140-2 level 3] only).

Lieberman ERPM Setup

Lieberman ERPM must be installed on the target machine to carry on with the integration process.

The following setup is required:

- A Windows Server 2012 R2 machine.

The installation of ERPM or RPM is addressed in the installation guide which may be downloaded from the documentation section on Lieberman Software's website at

http://www.liebsoft.com/Support_Documentation

The installation guide also covers port requirements and supported host operating systems as well as the installation of pre-requisites such as IIS, MS SQL, accounts, and more.

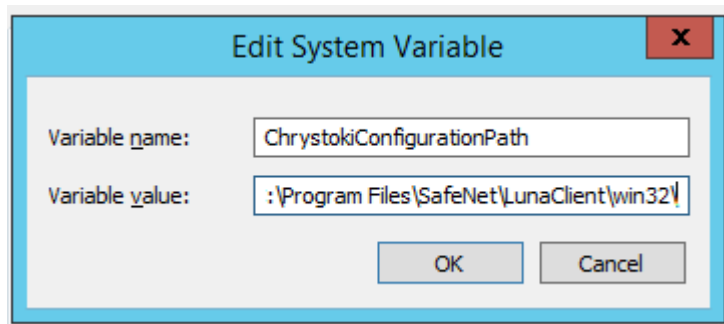
CHAPTER 2

Integrating Lieberman ERPm with Luna HSM

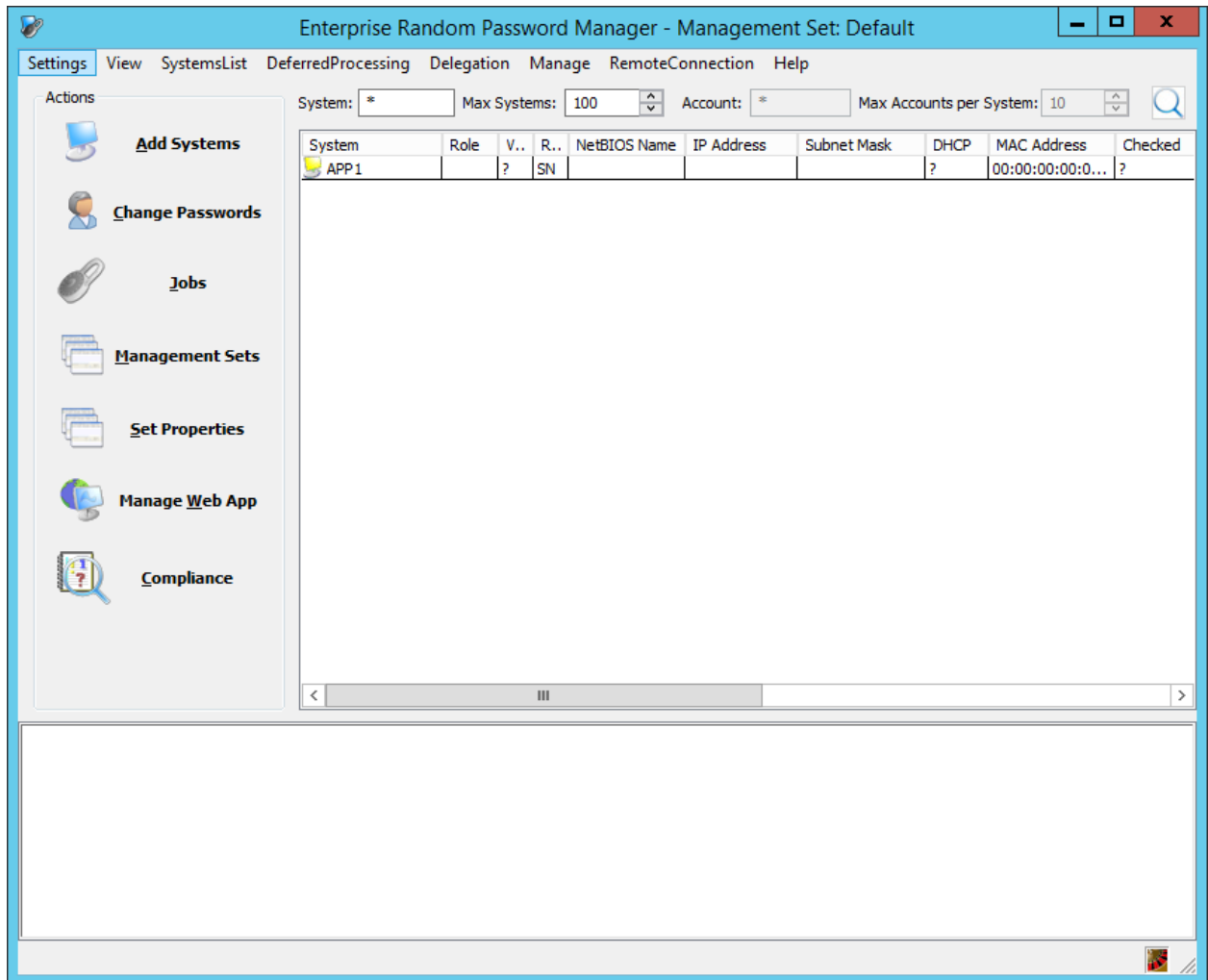
This chapter outlines the steps to create encryption keys which are secured on Luna HSM.

Configuring the ERPm to use keys from Luna HSM

- a) Log on to system as an administrative privilege.
- b) Copy the Chrystoki Configuration file from following directory:
C:\Program Files\SafeNet\LunaClient\crystoki.ini
To
C:\Program Files\SafeNet\LunaClient\win32\crystoki.ini
- c) Edit the configuration file “C:\Program Files\SafeNet\LunaClient\win32\crystoki.ini” and make the following changes in [Chrystoki2] section:
[Chrystoki2]
LibNT=C:\Program Files\SafeNet\LunaClient\win32\cryptoki.dll
- d) To use the 32 bit library you need to change ChrytokiConfigurationPath variable, click Start -> System -> Change Settings -> Advanced -> Environment Variables...
- e) Under System Variables, select ChrytokiConfigurationPath, click Edit and set the Variable Value as “C:\Program Files\SafeNet\LunaClient\win32\
Click OK three times and close the System window.



- f) Open the ERPM Management Console and click Settings and select Encryption Settings...



- g) In Encryption Settings window, click Use Encryption for Passwords in Database and select Use Hardware Cryptography Module for hardware-based cryptography.

Encryption Settings

Use Encryption for Passwords in Database

Software-based Cryptography Key Settings

Use software-based cryptography

Encryption Type: AES Key Length: 256 bit

Key Signature:

Test Key Export Key Import Key New Key

Software FIPS 140-2 Encryption Provider

Use FIPS 140-2 software provider if available

Test FIPS 140-2 Provider Availability

Only use FIPS 140-2 software provider (abort application if not available)

PKCS #11 Hardware-based Cryptography

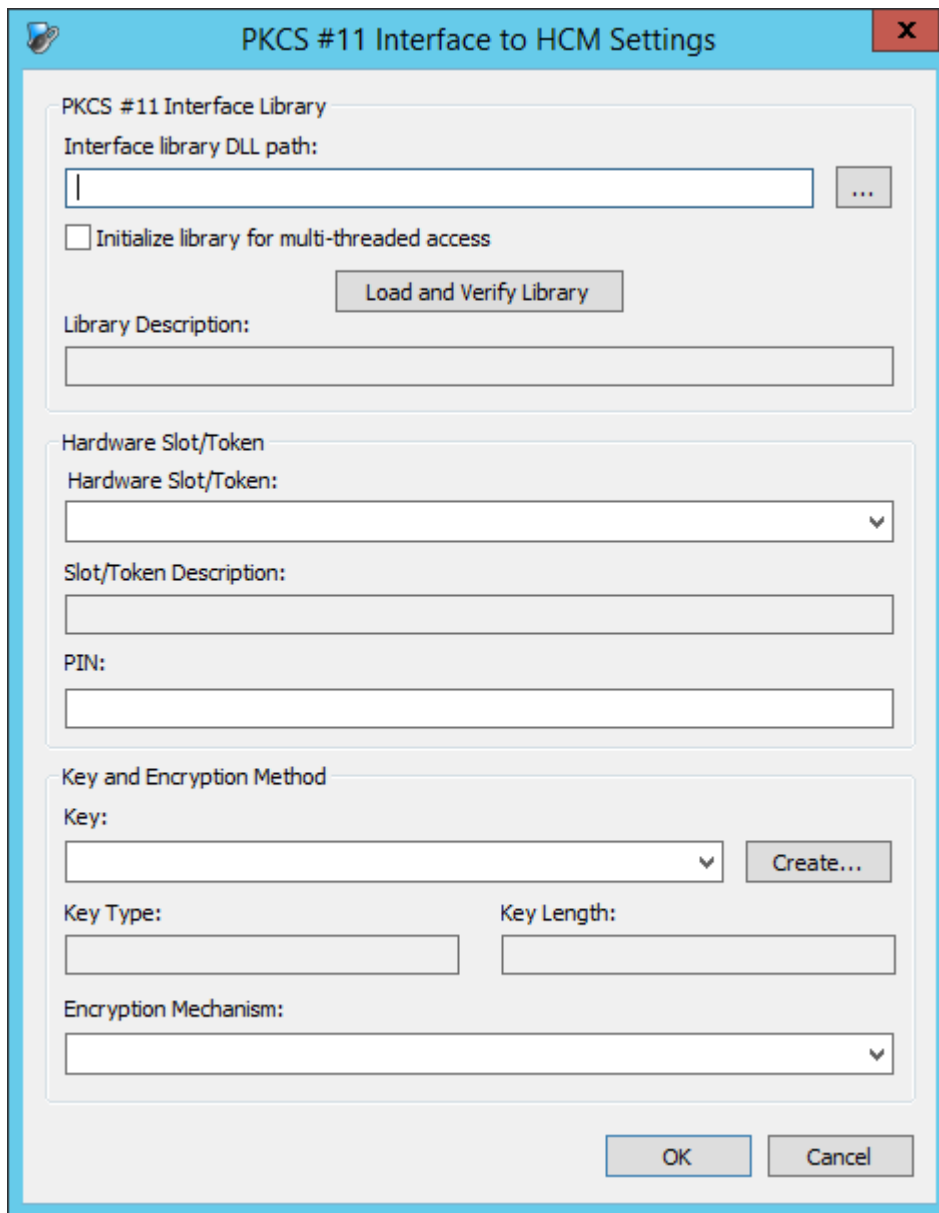
Use Hardware Cryptography Module for hardware-based cryptography

Key:

Force change and clear any passwords which cannot be decrypted

OK Cancel

h) Click ... button to open the PKCS #11 Interface to HCM Settings console.



- i) Click ... button to browse and select C:\Program Files\SafeNet\LunaClient\win32\cryptoki.dll library. Select Initialize library for multi-threaded access, click Yes when warning message displayed. After this click Load and Verify Library and click OK.

The screenshot shows a dialog box titled "PKCS #11 Interface to HCM Settings". It is divided into three main sections:

- PKCS #11 Interface Library:** Contains a text field for "Interface library DLL path" with the value "C:\Program Files\SafeNet\LunaClient\win32\cryptoki.dll" and a browse button "...". Below it is a checked checkbox for "Initialize library for multi-threaded access" and a "Load and Verify Library" button. A "Library Description" field contains the text "Chrystoki".
- Hardware Slot/Token:** Contains a dropdown menu for "Hardware Slot/Token", a text field for "Slot/Token Description", and a text field for "PIN".
- Key and Encryption Method:** Contains a dropdown menu for "Key" with a "Create..." button, a "Key Type" field, a "Key Length" field, and a dropdown menu for "Encryption Mechanism".

At the bottom of the dialog are "OK" and "Cancel" buttons.

- j) Select Hardware Slot\Token and enter the PIN. The PIN will be your HSM partition password.

PKCS #11 Interface to HCM Settings

PKCS #11 Interface Library

Interface library DLL path:
C:\Program Files\SafeNet\LunaClient\win32\cryptoki.dll

Initialize library for multi-threaded access

Load and Verify Library

Library Description:
Chrystoki

Hardware Slot/Token

Hardware Slot/Token:
part2

Slot/Token Description:
LunaNet Slot

PIN:
●●●●●●●●

Key and Encryption Method

Key:
Create...

Key Type: Key Length:

Encryption Mechanism:

OK Cancel

- k) Click Create... button, Select Key Type as AES and Key Length as 256 bits and enter the Key Label. Do not select the Private (must be logged into token to access), remove the selection if already selected. Click OK.

Create New Key

Active PKCS #11 Library and Token Information

Interface Library Path:
C:\Program Files\SafeNet\LunaClient\win32\cryptoki.dll

Library Description:
Chrystoki

Hardware Slot/Token:
part2

Slot/Token Description:
LunaNet Slot

New Key Parameters

Key Type: AES Key Length: 256 bits

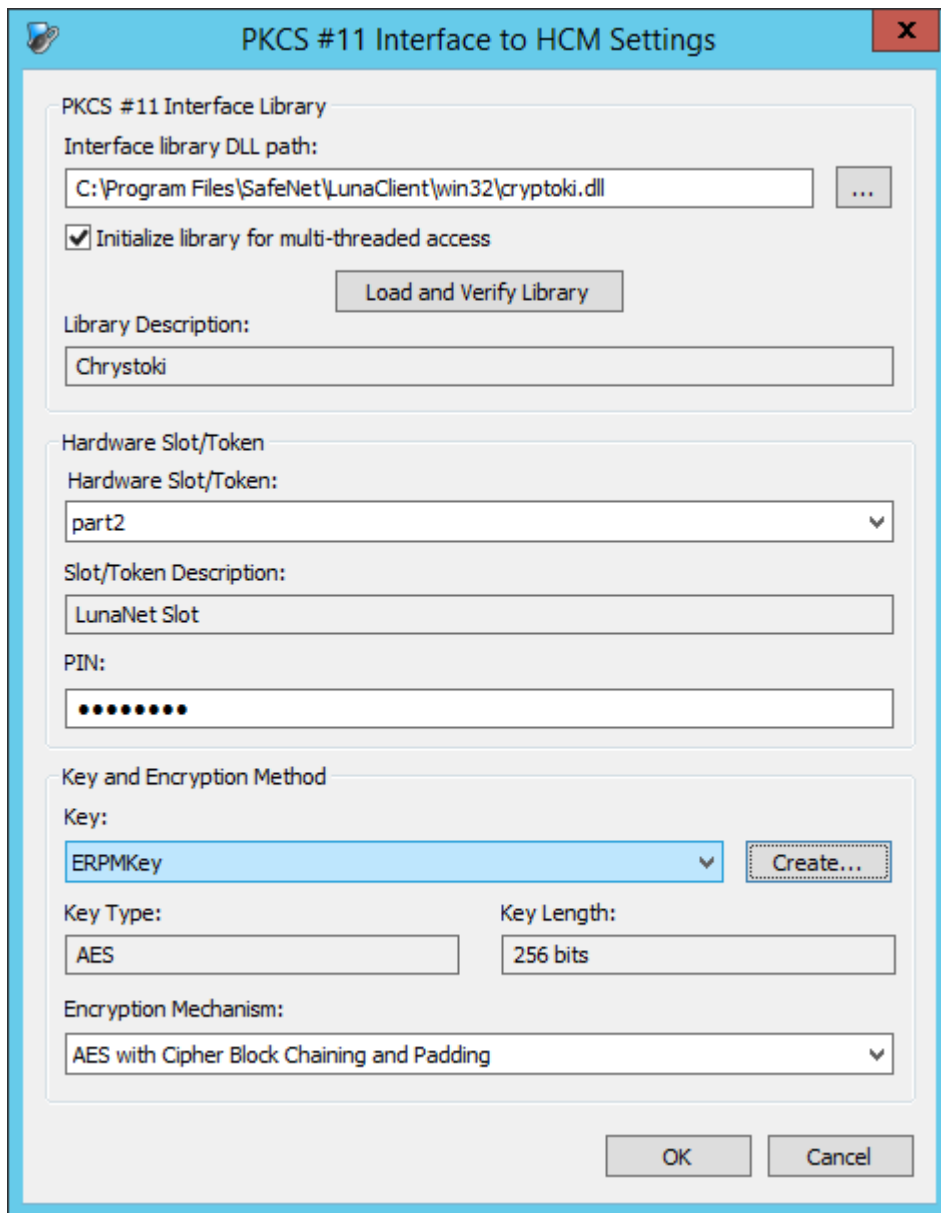
Label:
ERPKey

Private (must be logged into token to access)

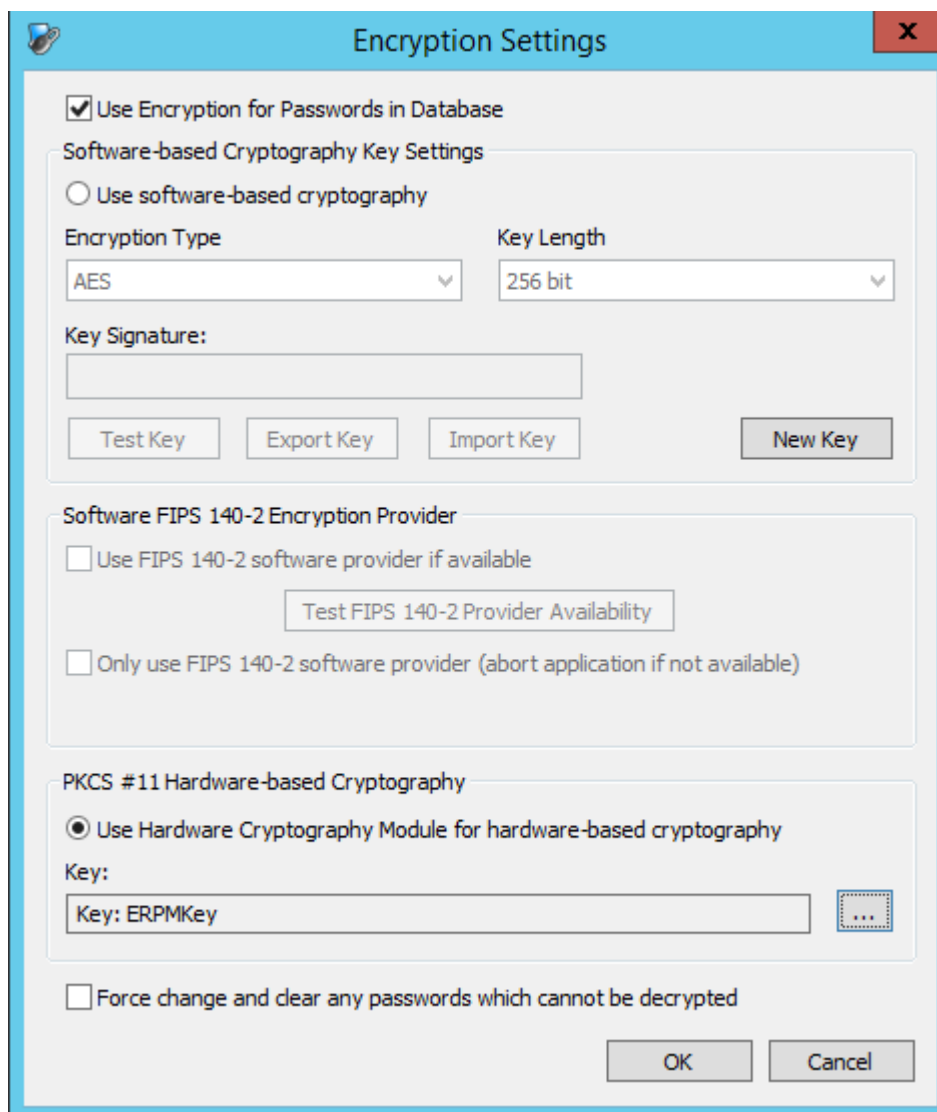
Sensitive (certain attributes cannot be exported)

OK Cancel

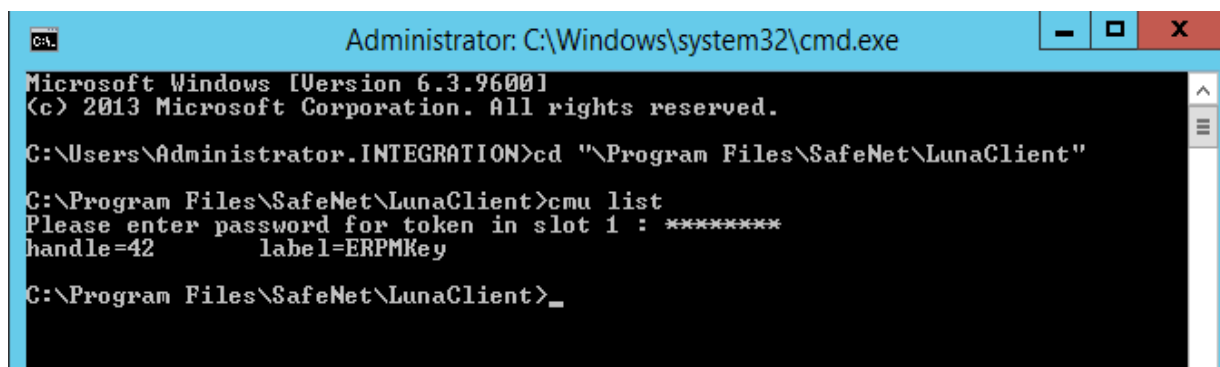
- I) Click OK to close the PKCS #11 Interface to HCM Settings console when the key is created.



- m) Click OK to close the Encryption Setting console.



- n) You can see the AES key created on the HSM using the CMU utility provided with the client.



ERPMKey created on the Luna SA partition will be used to encrypt all passwords stored in the database and you cannot able to recover the password if the key is lost or HSM is not available.

- o) You can add the systems in ERPM Management Console and their passwords will be saved in database encrypted using the key created on Luna SA. You can check the Stored Passwords using SQL query below:

```
Select sSystemName, sAccountName, sDescription, sEncryptedPassword from
tbl_StoredPasswords;
```

The screenshot shows the Microsoft SQL Server Management Studio interface. The query window displays the following SQL query:

```
Select sSystemName, sAccountName, sDescription, sEncryptedPassword from
tbl_StoredPasswords;
```

The Results pane shows the following data:

sSystemName	sAccountName	sDescription	sEncryptedPassword
DC1.Integration.com	Test1		EC9008DA8DDFA4388921D30164AC661D2D412D086CB2868F37D11F8A6C128C2746D21CD8903F5

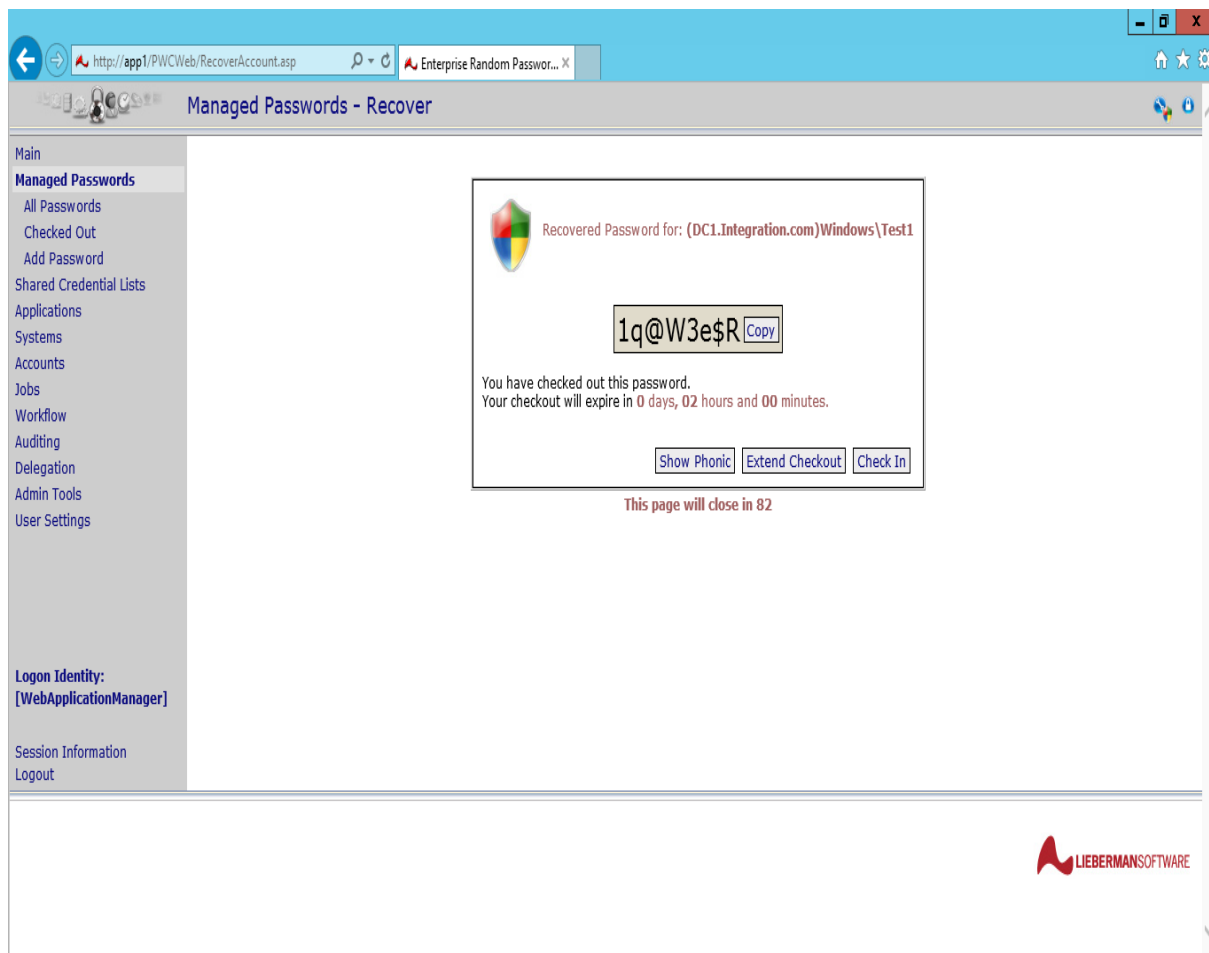
The Properties pane on the right shows connection details for the current connection:

- Aggregate Status: Connection failed, Elapsed time: 00:00:00.062, Finish time: 4/8/2015 8:13:12 PM, Name: APP1\LSC, Rows returned: 1, Start time: 4/8/2015 8:13:12 PM, State: Open
- Connection: Connection name: APP1\LSC (INTEGRATION)
- Connection Details: Connection elapsed: 00:00:00.062, Connection finish: 4/8/2015 8:13:12 PM, Connection rows: 1, Connection start time: 4/8/2015 8:13:12 PM, Connection state: Open, Display name: APP1\LSC, Login name: INTEGRATION\Administrator, Server name: APP1\LSC, Server version: 12.0.2000, Session Tracing ID: SPID: 53

The status bar at the bottom indicates: Query executed successfully. APP1\LSC (12.0 RTM) | INTEGRATION\Administrator | ERPMDB | 00:00:00 | 1 rows

You can see that password is encrypted using the ERPMKey.

- p) To recover the password launch the web console and when logged click on Manage Password -> Options -> Recover Password. Enter the reason for recovery and click Recover. It will display the clear text password after decrypting the encrypted password stored in database using ERPMKey created on Luna SA.



It shows that we can recover the password only if the ERPMKey created on the Luna SA partition is available. We can see that Integration is completed and working as expected.