

Adobe LiveCycle and Luna SA

Integration Guide



THE
DATA
PROTECTION
COMPANY

Preface

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Limitations

This document does not include the detailed 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.

Disclaimers

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.

Technical Support

If you encounter a problem while installing, registering or operating this product, please make sure that you have read the documentation. If you cannot resolve the issue, please contact your supplier or SafeNet support.

SafeNet 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 SafeNet and your organization. Please consult this support plan for further information about your entitlements, including the hours when telephone support is available to you.

Technical Support Contact Information:
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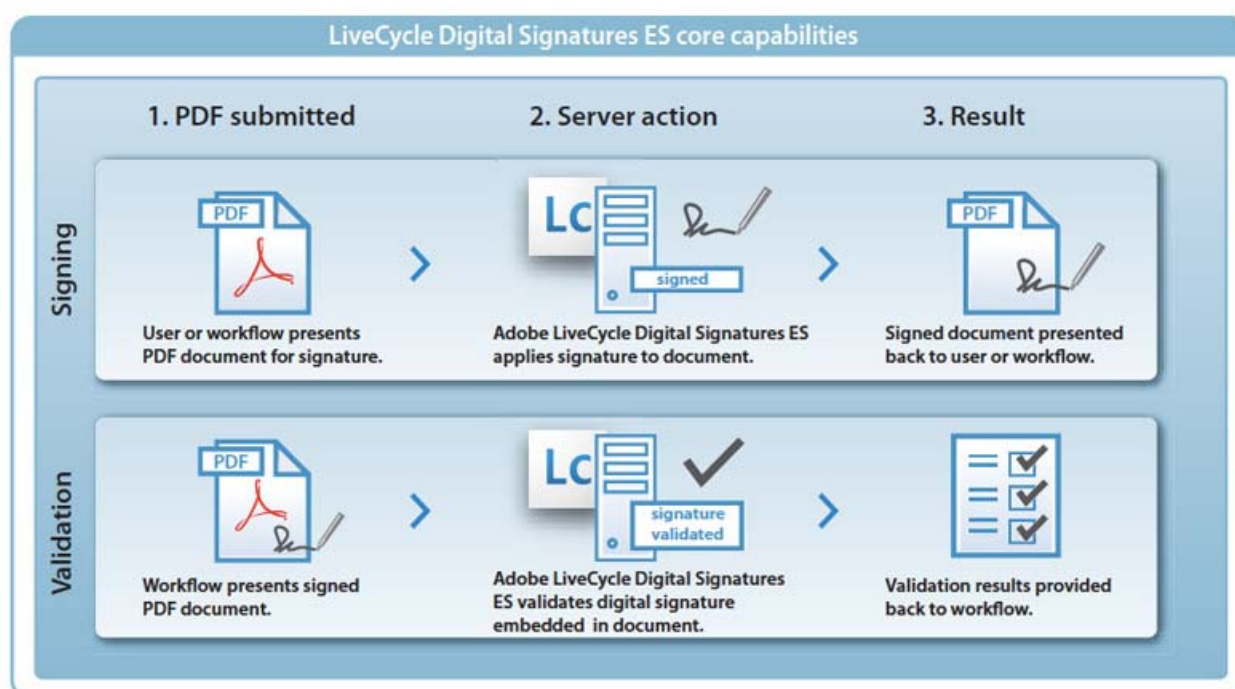
Chapter 1

Introduction

This document is intended to guide security administrators to install, configure and integrate Adobe LiveCycle with SafeNet Luna Hardware Security Module (HSM).

The Adobe® LiveCycle module enables the creation of automated workflows involving electronic signatures for critical business processes. Using electronic signature capabilities in a server environment, your organization can bring more paper-based processes online, reduce costs, improve compliance, and increase customer satisfaction — all while providing information authenticity and integrity.

LiveCycle provides a new, easy-to-use interface to integrate digital signatures into Hardware Security Modules (HSMs), reducing the complexity of configuring your system. By taking advantage of HSMs and Federal Information Processing Standard (FIPS)-mode support, you can create best-of-breed digital signature solutions that fit with your authentication investments and governance framework.



Scope

3rd Party Application Details

- Adobe LiveCycle Enterprise Suite 2
- Adobe LiveCycle Services 9.0 Service Pack 2
- Adobe LiveCycle Enterprise Suite 4

Supported Platforms

The integration between the SafeNet Luna SA and the Adobe LiveCycle has been tested for the following combinations:

Operating System	SafeNet Luna SA Version	Adobe LiveCycle
Windows Server 2008 (32 bit)	4.4.1	ES2
Windows Server 2008 (32 bit)	5.0	ES2
Windows Server 2008 R2	4.4.1	ES2 Service Pack 2
RHEL 6 (64 bit)	5.2.1	ES4
Windows Server 2008 R2 SP1	5.2.1	ES4

HSMs and Firmware Version

- K5 HSM f/w 4.6.8
- K6 HSM f/w 6.0.8
- K6 HSM f/w 6.10.1

Library and Driver Support

- PKCS#11 v2.01 dynamic library

Distributions

- Luna SA 1U Appliance s/w 4.4.1
- Luna SA 1U Appliance s/w 5.0
- Luna SA 1U Appliance s/w v5.2
- Luna SA Client s/w v4.4.1 (32-bit)
- Luna SA Client s/w v5.0 (32-bit)
- Luna Client s/w v5.2.1 (64-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 a secure admin password
- Luna SA a hostname, suitable for your network
- Luna SA network parameters are set to work with your network
- Initialized the HSM on the Luna SA appliance.
- Created and exchanged certificates between the Luna SA and your "Client" system.
- Created a partition on the HSM, remember the partition password that will be later used by the Adobe LiveCycle Server.
- Register the Client with the partition and run the "vtl verify" command on the client system to display a partition from Luna SA.
- Enabled 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).

Note: The Sun PKCS#11 provider is not supported on the Windows 64-bit platform. As a result, we need to install Luna SA (32 bit) client on Windows 64-bit platform. Luna Client v5.2.1 do not comes with 32 bit installer so you need to install the 64 bit client and use the 32 bit library available at the following location:

C:\Program Files\SafeNet\LunaClient\win32 (Luna Client v5.2.1 only)

Please refer the following steps while installing Luna SA 32 bit client on Windows Server 2008 R2 platform:

- Create a folder LunaSA in the C:\Program Files
- Run the Luna SA client setup
- Change the default installation path "C:\Program Files (x86)\LunaSA" to "C:\Program Files\LunaSA" when it prompt during installation.

Adobe LiveCycle Enterprise Suite 2 setup

For a detailed installation procedure, please refer to the Adobe LiveCycle ES2 documentation.

http://help.adobe.com/en_US/livecycle/9.0/documentation.html#task=0,1,2,3,4,5,6&module=-1

Adobe LiveCycle Enterprise Suite 4 setup

For a detailed installation procedure, please refer to the Adobe LiveCycle ES documentation.

<http://helpx.adobe.com/livecycle.html>

Chapter 2

Integrating Luna SA with Adobe LiveCycle Enterprise Server

To configure Live Cycle Server we need to perform the following steps so that it could recognize the Luna SA cryptographic device:

Install or create credentials on the Luna SA using cmu utility:

□ For test purposes, we have used a Trial DocumentSign for Adobe CDS.

i) Create a certificate request using LunaSA's CMU utility using the following command:

```
cmu generatekeypair -slot=1 -modulusBits=2048 -publicExp=65537 -sign=1 -verify=1 -labelPublic="Public Verify Key" -labelPrivate="Private Verify Key" -id=101000
```

ii) Determine the key handles for the public and private keys using the following command:

```
cmu list -slot=1
```

iii) Generate a PKCS #11 request based on the public and private keys using the following command:

```
cmu requestcertificate -slot=1
```

Fill out the parameters, including the public and private key handles, it will create a .req file.

iv) Submit the Certificate Signing Request:

Open the .req file that you have created using the above command and copy the contents to submit the certificate request to Certificate Authority and obtain the signed certificate.

v) Obtain the certificate signed by Certificate Authority and save the signed request to a file with .cer extension. For example CSR.cer

vi) Import the signed certificate into the LunaSA appliance using the following command:

```
cmu import -slot=1 -inputFile=CSR.cer -label="ServerCert"
```

vii) Determine the key handles for the certificate using the following command:

```
cmu list -slot=1 (To get Certificate Handle on Luna SA)
```

viii) Add an ID to the new Certificate:

```
cmu setAttribute -handle=x -id=101000
```

where x is the handle of the certificate on the HSM

For Windows Server 2008 R2 (64 bit):

Once you have completed the above steps you need to perform the additional steps for Windows Server 2008 R2 (64 bit) platform when using the Luna SA 4.4.1 only:

- Copy the following files from:

```
C:\Program Files\LunaSA\JSP\lib\LunaAPI.dll
C:\Program Files\LunaSA\JSP\lib\LunaJCASP.jar
C:\Program Files\LunaSA\JSP\lib\LunaJCESP.jar
```

To:

```
C:\Adobe\Adobe LiveCycle ES2\Java\32bit\jdk1.6.0_14\jre\lib\ext\LunaAPI.dll
C:\Adobe\Adobe LiveCycle ES2\Java\32bit\jdk1.6.0_14\jre\lib\ext\LunaJCASP.jar
C:\Adobe\Adobe LiveCycle ES2\Java\32bit\jdk1.6.0_14\jre\lib\ext\LunaJCESP.jar
```

- Modify the java.security file located in the directory:

```
C:\Adobe\Adobe LiveCycle ES2\Java\32bit\jdk1.6.0_14\jre\lib\security
```

To include the following:

```
# List of providers and their preference orders (see above):
#
security.provider.1=com.chrysalisits.crypto.LunaJCAProvider
security.provider.2=com.chrysalisits.crypto.LunaJCEProvider
security.provider.3=sun.security.provider.Sun
security.provider.4=sun.security.rsa.SunRsaSign
security.provider.5=com.sun.net.ssl.internal.ssl.Provider
security.provider.6=com.sun.crypto.provider.SunJCE
security.provider.7=sun.security.jgss.SunProvider
security.provider.8=com.sun.security.sasl.Provider
security.provider.9=org.jcp.xml.dsig.internal.dom.XMLDSigRI
security.provider.10=sun.security.smartcardio.SunPCSC
security.provider.11=sun.security.mscaapi.SunMSCAPI

# Default keystore type.
#keystore.type=jks
keystore.type=luna
```

Configure Adobe LiveCycle server:

- i) Login in to Adobe LiveCycle Administration Console, click Settings >Trust Store Management > HSM Credentials and then click Add.
- ii) In the Profile Name box, type a string used to identify the Luna SA alias.
- iii) In the PKCS11 Library box, type the fully qualified path of your Luna SA cryptoki library on the server. For example

Windows:

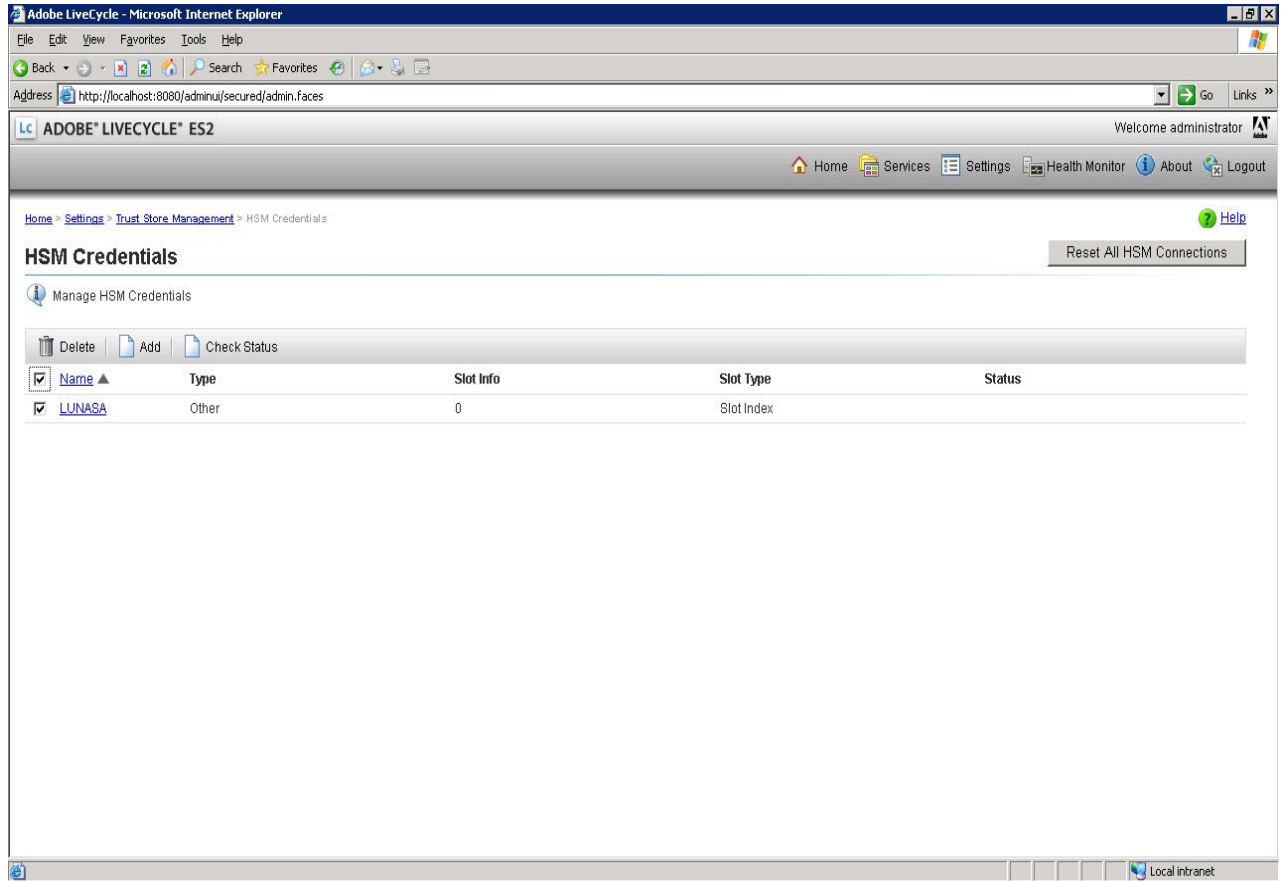
C:\Program Files\LunaSA\cryptoki.dll (Luna Client v4.4.1 and 5.0)

C:\Program Files\SafeNet\LunaClient\win32\cryptoki.dll (Luna Client v5.2.1)

Linux:

/usr/safenet/lunaclient/lib/libCryptoki2_64.so (Luna Client v5.2.1)

- iv) Click Test HSM Connectivity. If NTLS is successfully configured, a message displays, stating that the Luna SA is available. Click Next.
- v) Use either the Token Name, Slot ID, or Slot List Index to identify where the credentials are stored on the Luna SA.
 - Token Name: Corresponds to a partition name (for example, part1).
 - Slot Id: The Slot ID is an integer that corresponds to the slot, which in turn corresponds to a partition. For example, the client (LiveCycle ES2 Server) registered with the part1 partition first. This maps slot 1 to the part1 partition, for this client. Because part1 is the first partition registered, the Slot ID is 1 and you would set Slot Info to 1.
- vi) Enter the Luna SA partition password and click Next.
- vii) Select the Credential and click Next.



Click on the Check Status to verify the HSM Status. You have successfully integrated the Adobe LiveCycle Enterprise Server with Luna HSM.