

**Entrust**<sup>®</sup> Securing Digital Identities & Information



**Securing Your  
Digital Life**

Entrust Technical Integration Guide for Entrust Security Manager and SafeNET  
Luna SA 4.0

February 2007

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## Introduction

This technical integration guide provides an overview of how to integrate Entrust Security Manager with Luna SA 4.0.

The Entrust/Authority serves as the Certification Authority in an Entrust infrastructure. Although it can operate in “software” mode, it can optionally use hardware devices where cryptographic operations and key storage are performed.

## Entrust Product Information

### Entrust Authority

By managing the full lifecycles of certificate-based digital identities, Entrust Authority enables encryption, digital signature and authentication capabilities to be consistently, transparently applied across a broad range of applications and platforms.

### Entrust Entelligence

It delivers a single security layer that can encompass an enterprise's entire set of enhanced security needs, including authentication, authorization, digital signatures and encryption, for greater accountability and privacy. Entrust Entelligence empowers employees to work efficiently, communicate effectively, and use products and services online.

## Partner Product Information

**Partner Name:** SafeNET Inc.

**Website:** [www.safenet-inc.com](http://www.safenet-inc.com)

**Product Name:** Luna SA

**Product Version:** 4.0

**Platform and Service pack:** Windows 2000 SP4, Windows 2003 SP1, Solaris 8/9, AIX 5.1

### Luna SA

**Product description:** Featuring a tamper-resistant rack mount chassis, secure remote management, and scalable, upgradeable configuration options, the Luna SA makes it easy to add hardware security to your applications.

## Integration Overview

Entrust Authority Security Manager serves as the Certification Authority in an Entrust infrastructure. When using it in “hardware” mode, you can use the Luna SA hardware devices for cryptographic operations and key storage. Among the operations performed on hardware devices are:

- Secure generation of the CA signing private key
- Secure storage of the CA root key
- Signing of certificates and CRL's using the generated or imported key.
- 

Entrust Authority utilizes the following APIs: PKCS #11.

# Integration Details

## Upgrading Overview

Other documents describe upgrades from earlier versions of Luna SA product and earlier versions of Entrust software. This document describes further upgrade paths.

If your system uses a PKCS#11 version prior to 2.01, or uses Entrust prior to version 7.1, contact Entrust. The starting point for this document can be an existing installation that uses:

- PKCS #11 version 2.01 libraries [Luna SA release 3.1 Client and 3.1 appliance with firmware 4.1.0 or 4.4.0]

to create the keys for use with Entrust 7.1.

The outcome is:

- Luna SA 4.0 with firmware 4.5.3 with Entrust Security Manager 7.1 or Entrust Security Manager 7.1 SP2

The general upgrade steps include:

- If you are starting from a Luna SA system, then backup your working Luna SA partitions.
- Acquire the update zip archive from SafeNet and extract the update software and documents.
- Stop Entrust from accessing the Luna HSM.
- For Luna SA use the Luna shell `lunash` to deactivate the HSM Partition.
- Perform the Luna HSM update (for Luna SA, the Client software, the appliance software and the appliance firmware, as well as [optionally] backup token firmware).
- Perform the Entrust upgrade.
- Resume using the upgraded Entrust Security Manager with your upgraded Luna HSM.

Contact Entrust Support if further assistance is required.

## 1 –New Install Luna SA 4.0 with Entrust Security Manager 7.1 or 7.1 SP2

### Windows, Solaris, AIX

***IMPORTANT: HP-UX is not supported with Entrust Security Manager 7.1 and Luna SA 4.0. Use Luna SA 3.1 with Entrust Security Manager 7.1.***

This section describes how to integrate new installations of Entrust Authority Security Manager 7.1 or 7.1 SP2 with Luna SA 4.0. Note that in the following discussion, there are two server systems, the Entrust Authority Security Manager Server, and the Luna SA HSM Server. For the purpose of this discussion, the Entrust system assumes the role of Client to the Luna SA.

## Preparing the Luna SA HSM Server

1. Install the Luna SA Client software on the Entrust/PKI server prior to the installation of Entrust software. Refer to the Safenet Luna SA On-line Help documentation.
2. Ensure that one HSM Partition is created on the Luna SA. The HSM Partition Password/login secret will be used during the Entrust installation. Confirm that the Luna SA HSM Partition can be accessed with the HSM Partition Password, and that CKDEMO can login to the partition.

## Installing Entrust with Luna SA

3. Install Informix 9.4 for Entrust Security Manager 7.1, following Entrust documentation.
4. Install Entrust Security Manager 7.1, following Entrust documentation.
5. Run the Entrust Security Manager 7.1 Configuration Utility. At the point where you choose whether to store keys in hardware or in software, select hardware. Point to the Luna SA library path for libcryptoki for example /usr/lib/libcryptoki2.so.

### **Note Luna SA supports only PKCS#11 V2.**

6. Entrust Configuration Utility presents the option to use Luna SA hardware, with a given serial number. Select the Luna SA hardware.
7. Continue with the Configuration Utility until complete.
8. Initialize Entrust Security Manager for the first time with Entrust Master Control. Add the passwords for Master1, Master2, Master3 and First Officer, following Entrust documentation.
9. Entrust Security Manager detects hardware and presents a screen/GUI requesting the hardware password. Enter the HSM Partition's Partition Password/login secret that was generated at the creation of the HSM Partition. If you are using a Luna SA with Secure Authentication & Access Control, ensure that the black PED Key is inserted in the PED.
10. Entrust Security Manager generates the root CA keys on the Luna SA in the provided partition.
11. Entrust Security Manager performs a database backup.
12. Entrust/PKI is now running.

**IMPORTANT: AIX 5.1 is only supported with ESM 7.1 and Luna SA 4.0. Do not use ESM 7.1 SP2 as this deprecates AIX 5.1 support.**

## Installing Entrust 7.1 SP2

**IMPORTANT: Windows and Solaris are the only supported systems with ESM 7.1 SP2 with Luna SA 4.0.**

13. Login as Master1 and stop the Entrust Services
14. Install Entrust Security Manager 7.1 SP2, following Entrust documentation.

## 2 – Updating Luna SA 3.1 with Entrust 7.1 to Luna SA 3.3 with Entrust 7.1 to Luna SA 4.0 with Entrust 7.1 or Entrust 7.1 SP2

### Windows, Solaris, AIX, HPUX

1. Start with a working configuration of Luna SA 3.1 and Entrust Security Manager 7.1.

**IMPORTANT: HPUX is not supported with Entrust Security Manager 7.1 and Luna SA 4.0. If you have Luna SA 3.1 with Entrust 7.1, proceed no further.**

2. Acquire the Luna SA upgrades. You will need:

Luna SA Appliance Software Release 3.3, in the form of CD 900552-036 or file 610047-036.zip

Luna SA Client Software Release 3.3, CD 900506-035 or the file 610036-035.zip

Luna SA Appliance Software Release 4.0, in the form of CD 900552-037 or file 610047-037.zip

Luna SA Client Software Release 4.0, CD 900506-036 or the file 610036-036.zip

3. Stop Entrust Security Manager.
4. Follow the instructions in document 800248-018 *Update Luna SA Client, Appliance & Firmware from release 3.1.0 (or later) to 3.3.0* to update your Luna SA Client software, appliance software, appliance firmware, and backup token firmware.
5. Activate the Luna SA Partition for use with the Client (which in this case is your Entrust Security Manager 7.1 server).
6. Start Entrust Security Manager and verify that it functions properly with the updated Luna SA.
7. Stop Entrust Security Manager.
8. Follow the instructions in document 800248-019 *Update Luna SA Client, Appliance & Firmware from release 3.3.0 (or later) to 4.0.0* to update your Luna SA Client software, appliance software, appliance firmware, and backup token firmware.
9. Start Entrust Security Manager 7.1 and verify that it now functions with the updated Luna SA.
10. Stop Entrust Security Manager.

**IMPORTANT: AIX 5.1 is only supported with ESM 7.1 and Luna SA 4.0. Do not use ESM 7.1 SP2 as this deprecates AIX 5.1 support.**

### Installing Entrust 7.1 SP2

**IMPORTANT: Windows and Solaris are the only supported systems with ESM 7.1 SP2 with Luna SA 4.0.**

11. Upgrade Entrust Security Manager 7.1 to 7.1 SP2
12. Start Entrust Security Manager 7.1 and verify that it now functions with the updated Luna SA.

## System Behavior/Limitations

When running Entrust Security Manager 7.1 on HPUX11i, use Luna SA 3.1. Do not upgrade to Luna SA 4.0. Luna SA 4.0 does not support AIX 5.2 and so does not support Security Manager 7.1 SP2 on AIX. Do not apply SP2 to Security Manager 7.1 if you plan to use Luna SA 4.0 on AIX 5.1.

## System Components

<b>CP (Critical Path) Directory Server 4.2</b> <b>Informix 9.4</b> <b>Entrust Security Manager 7.1</b> <b>Entrust Security Manager 7.1 SP2</b> <b>Entrust Security Manager Administration 7.1</b> <b>Entrust Entelligence/Desktop Solutions 7.0</b>	<b>Luna SA Client 4.0 software</b> <b>Luna SA SDK 4.0 software</b> <b>Luna SA 4.0 Appliance with Firmware 4.5.3</b> <b>(FIPS Validated)</b> <b>Luna SA 4.0 Appliance with Firmware 4.6.x</b> <b>(RoHS)</b>
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## Partner Contact Information

**Sales Contact:** (800) 533-3958

**Support Contact:** (800) 545-6608

Please check PSIC for the latest supported version information at:

<https://www.entrust.com/support/psic/index.cfm>

### Additional Information

The SafeNet Luna® family of products comprises range of hardware security solutions for digital identity applications. Luna products feature true hardware key management to maintain the integrity of encryption keys. Sensitive keys are created, stored, and used exclusively within the secure confines of the Luna hardware security module (HSM) to prevent compromise.

To learn more about the Luna SA product, view the following web site link where additional product information can be found:

<http://www.safenet-inc.com/products/pki/lunaSA.asp>