

SentinelHASP®

Moving from Sentinel SuperPro to Sentinel HASP
Migration Guide



Copyrights and Trademarks

Copyright © 2010 SafeNet, Inc. All rights reserved.

Cross-Locking, Hardlock, Hasp, HASP4, Method-Level Protection, Sentinel, Sentinel HASP, Sentinel HASP HL, Sentinel HASP SL, Sentinel HASP Business Studio, Sentinel HASP Reporting Module, Sentinel HASP Trialware, Sentinel SuperPro, and Sentinel UltraPro are either registered in United States Patent and Trademark Office or are trademarks of SafeNet, Inc. and its subsidiaries in the United States and/or other countries, and may not be used without written permission.

All other trademarks are property of their respective owners.

Patents

HASP® hardware and/or software products described in this document are protected by one or more of the following Patents, and may be protected by other United States and/or foreign patents, or pending patent applications: US 5,359,495, US 5,898,777, US 6,189,097, US 6,073,256, US 6,272,636, US 6,009,525, US 6,044,469, US 6,055,503, US 6,334,213, US 6,434,532, US 6,285,985, US 6,334,214, US 6,009,401, US 6,243,692, US 6,363,356, US 7,149,928, US 7,065,652, US 6,915,425, US 6,898,555, US 7,065,650, US 7,225,336, US 7,191,325, EP 1220075, EP 1318451, EP 1271310, EP 1353259, EP 1387235 and EP 1439446.

Disclaimer

We have attempted to make this document complete, accurate, and useful, but we cannot guarantee it to be perfect. When we discover errors or omissions, or they are brought to our attention, we endeavor to correct them in succeeding releases of the product. SafeNet, Inc., is not responsible for any direct or indirect damages or loss of business resulting from inaccuracies or omissions contained herein. The specifications contained in this document are subject to change without notice.

November 2010

Revision 0910-1

Contents

Introduction	4
About Sentinel HASP	4
About This Guide	4
Available Migration Paths.....	5
Migration Path 1—HASP Complementing SuperPro Implementation	6
Stage 1: Initial Implementation of Sentinel HASP Functionality	8
Implementing Stage 1	8
Stage 2: Full Implementation of Advanced Sentinel HASP Functionality	9
Implementing Stage 2	9
Migration Path 2—HASP and SuperPro Combined Implementation	10
Stage 1: Combining Sentinel SuperPro with Sentinel HASP Protection	11
Implementing Stage 1	12
Stage 2: Full Implementation of Advanced Sentinel HASP Functionality	13
Implementing Stage 2	13
Migration Path 3—Gradual Migration from SuperPro to HASP Using a Launcher Application	14
Stage 1: Initial Implementation of Sentinel HASP Functionality	15
Implementing Stage 1	15
Stage 2: Full Implementation of Sentinel HASP Functionality	16
Implementing Stage 2	16
Appendix A: Sentinel HASP and SuperPro Comparison Tables.....	17
Table 1: Comparison of HASP HL Firmware v.3.21 Keys and Sentinel SuperPro Keys	17
Table 2: Sentinel SuperPro and Sentinel HASP Tool Equivalents	18
Table 3: Comparison of SuperPro API Functions and HASP Run-time API Functions	19

Introduction

About Sentinel HASP

Sentinel HASP® is a Software Digital Rights Management (DRM) solution that delivers strong copy protection, protection for Intellectual Property, and secure and flexible licensing. Sentinel HASP is an all-in-one solution that enables you to choose a hardware-based or software-based protection key, based on business considerations. Sentinel HASP software engineering and business processes are completely separate to ensure:

- ◆ Effective and efficient product development
- ◆ Quick time to market
- ◆ Immediate addressing of customer and market needs
- ◆ Comprehensive support throughout a software product's protection and licensing life cycle

The level of protection for your software is determined by the locking type you choose—hardware-based or software-based. Sentinel HASP hardware-based protection, which utilizes HASP HL keys, provides the safest and strongest level of protection. Sentinel HASP software-based protection, which utilizes HASP SL keys and software activation, provides electronic software and license distribution. Both keys are supported by the same set of tools and APIs, and the transition between them is transparent.

About This Guide

This migration guide is intended for users of SafeNet Sentinel SuperPro hardware keys (referred to in this guide as *SuperPro*). The guide's main focus is for users who wish to continue using a hardware-based protection solution, but want to migrate to the more comprehensive HASP HL key protection and advanced licensing provided by Sentinel HASP. The guide assumes that the reader has a good understanding of both the Sentinel SuperPro and the Sentinel HASP systems and provides the following:

- ◆ Migration paths from Sentinel SuperPro to Sentinel HASP, each with an overview, guidelines, and discussion of advantages and disadvantages.
- ◆ Procedures relating to the migration that are not documented in either the Sentinel SuperPro documentation or the *Sentinel HASP Software Protection and Licensing Guide* and Help documentation
- ◆ Tables comparing Sentinel HASP and Sentinel SuperPro specifications, tools, and API functions.

For detailed information and procedures relating to Sentinel HASP, refer to the *Sentinel HASP Software Protection and Licensing Guide* or to the relevant Sentinel HASP Help documentation.

For detailed information and procedures relating to Sentinel SuperPro, refer to the *Sentinel SuperPro Developer's Guide*.

Available Migration Paths

Several migration paths are available to facilitate your move from Sentinel SuperPro to the protection and licensing functionalities of Sentinel HASP.

All the migration paths contain two stages. In Migration Paths 1 and 2, the stages are not interdependent; it is possible to begin at Stage 2. (Note that Stage 2 is identical in both of these migration paths.) Similarly, the time that you wait before moving from one stage to the next is entirely at your discretion.

Migration Path 1 provides a gradual move towards improved security for your products in a very short time by merely adding Sentinel HASP as a complementary system to your current protection, and converting to the complete Sentinel HASP protection system at your convenience.

Using Migration Path 1, you introduce Sentinel HASP alongside your current protection, allowing a gradual adjustment at your own pace to the enhanced functionality offered by Sentinel HASP. When you are ready, you can phase Sentinel SuperPro out and fully implement the superior protection of the Sentinel HASP solution.

Migration Path 2 provides a way to phase out your installation base of SuperPro hardware keys over time—without necessitating the recall and replacement of SuperPro hardware keys, and without having to continue their distribution.

Using Migration Path 2, and creating a version of your software that recognizes both SuperPro and HASP HL keys, you can start distributing HASP HL keys to new customers while existing customers continue using their SuperPro keys. You can then gradually replace your install base of SuperPro keys with HASP HL keys.

Simultaneous migration of Migration Path 1 and Migration Path 2 is possible, to create a three-stage solution of full Sentinel HASP implementation.

1. Implement Stage 1 of Migration Path 1 to add increased security to your current Sentinel SuperPro protection using Sentinel HASP Envelope. Implementing this stage can provide an immediate solution to Sentinel SuperPro emulators.
2. Implement Stage 1 of Migration Path 2 for a gradual migration that does not require the distribution of both a Sentinel HASP protection key and a SuperPro key. This migration works well in markets that are less prone to piracy.

Implementation and distribution according to steps 1 and 2 may be performed simultaneously, depending on the requirements of your market.

3. Implement Stage 2 of Migration Path 2 to completely remove SuperPro keys and to upgrade to a full implementation of Sentinel HASP protection, utilizing the strongest security and accomplishing the highest licensing flexibility.

Migration Path 3 enables a gradual transition from SuperPro keys to Sentinel HASP.

A Sentinel SuperPro-protected version and a Sentinel HASP-protected version of your software are distributed, together with a launcher application. The launcher detects whether a Sentinel HASP protection key is connected to the computer and launches the appropriate version of the program. For more information, see “Migration Path 3—Gradual Migration from SuperPro to HASP” on page 14.

Migration Path 1—HASP Complementing SuperPro Implementation

This two-stage migration path enables you to improve your security in a very short time by implementing the Sentinel HASP Envelope, locked to a software-based HASP SL key that employs product activation. The activation process can be performed manually (using software utilities), or automatically via the Sentinel HASP Run-time and Activation APIs. The manual approach deploys quickly since no additional code must be written. However, it may be less convenient when dealing with larger installation bases. In such cases, it may be preferable to choose automatic activation, which will require integration of the APIs.

Stage 1 presents an opportunity for you to enhance your existing Sentinel SuperPro protection. While maintaining your trusted current protection, you have only to add Sentinel HASP as a complementary system. With this gradual change from Sentinel SuperPro to Sentinel HASP, the entire installation base is not forced to change all at once. While your clients adjust to Sentinel HASP protection, you can easily transition to Stage 2, which offers a much higher level of security and provides more portability. Stage 2 is ideal for new customers or when distributing new versions of your software.

The time that you wait before moving from one stage to the next is entirely at your discretion. You can even skip Stage 1 and proceed directly to Stage 2.

The following diagram summarizes the two stages for Migration Path 1.

Stage	1	2
Effort	Very low	Medium
Install base	Remains Sentinel SuperPro	Replace with HASP HL v3.21
Keys for new customers	HASP SL and SuperPro	HASP HL v3.21
Protection process	<ul style="list-style-type: none">Keep SuperPro implementationProtect using Sentinel HASP Envelope	<ul style="list-style-type: none">Remove SuperPro implementationImplement Sentinel HASP Run-time API in your code and protect using Sentinel HASP Envelope
Security level	Improved	Very high
Flexibility level (licensing, portability)	Low	Very high

Stage 1: Initial Implementation of Sentinel HASP Functionality

Stage 1 enables you to easily implement basic functionality of the Sentinel HASP system, while retaining SuperPro keys as your installation base. By supplying your customers with a HASP SL key with their SuperPro key, they gain increased security and licensing capabilities.

Implementing Stage 1

The following procedure details the steps required to implement Stage 1 of the SuperPro-to-HASP migration process. Where relevant, you are pointed to additional information in the *Sentinel HASP Software Protection and Licensing Guide*.

To implement Sentinel HASP functionality:

1. If you have not already done so, install Sentinel HASP Vendor Suite and introduce your Sentinel HASP Vendor keys.
(For more information, see the *Sentinel HASP Installation Guide*.)
2. Using Sentinel HASP Business Studio™, create the following:
 - a. A Feature that represents the protected application
 - b. A Provisional Product containing the Feature you created, with licensing terms stating that the license will expire in a specific number of days. The license period can be defined for any period between one and 90 days.
Note: After activation (in steps 8-10), the license can be set to **Perpetual**.
 - c. A Bundle of Provisional Products (as a V2C file) containing the Provisional Product you created
 - d. A Sentinel HASP Run-time Environment (RTE) Installer containing the Bundle of Provisional Products you created
 - e. A Sentinel HASP Remote Update System (RUS) utility (using the RUS branding option)
3. Integrate the Sentinel HASP RTE Installer with embedded license data into your application.
(See *Sentinel HASP Software Protection and Licensing Guide*, chapter “Distributing Sentinel HASP with Your Software.”)
4. Protect your program using the Sentinel SuperPro API, but do not implement Sentinel SuperPro Shell protection.
5. Use Sentinel HASP Envelope to protect your program.
6. Continue distributing a SuperPro key with each copy of your software.
7. Request the customer to run the Sentinel HASP RUS utility to generate a C2V file for the machine intended to host the license of the protected software, and to send you the file.
Note: The C2V file can also be generated using the Sentinel HASP Run-time API.
8. In Sentinel HASP Business Studio, create and execute a Product Key-based order.
9. In the Sentinel HASP Business Studio—Customer Services window, select **Activate Product** and use the C2V from the customer and the Product Key you just created to generate a V2C file.
10. Send the V2C file to the customer with instructions to activate the HASP SL key using this file and the Sentinel HASP RUS utility.

Note: Steps 8-10 can be performed using the Sentinel HASP Activation API.

Stage 2: Full Implementation of Advanced Sentinel HASP Functionality

Stage 2 enables you to fully implement the advanced functionalities of the Sentinel HASP system, thus gaining the benefit of its increased security and licensing capabilities. After you implement full Sentinel HASP protection, all customers using this version of your software must use HASP HL keys.

Implementing Stage 2

The following procedure details the steps required to implement Stage 2 of the Sentinel SuperPro-to-Sentinel HASP migration process. Where relevant, you are pointed to additional information in the *Sentinel HASP Software Protection and Licensing Guide*.

To implement advanced Sentinel HASP functionality:

1. If you have not already implemented Stage 1, perform steps 1–3 of Stage 1 in order to complete the following:
 - a. Install Sentinel HASP Vendor Suite and introduce your Sentinel HASP Vendor keys. As part of the Sentinel HASP Vendor key introduction process, Sentinel HASP generates customized Sentinel HASP Run-time API libraries for your Vendor Code.
(For more information, see the *Sentinel HASP Installation Guide*.)
 - b. Integrate the Sentinel HASP RTE Installer into your application.
(See *Sentinel HASP Software Protection and Licensing Guide*, chapter “Distributing Sentinel HASP with Your Software.”)
 - c. Link the Sentinel HASP Run-time API library to the application that is to be protected.
2. Replace all calls to Sentinel SuperPro in the code with calls to HASP HL keys.
For a list of Sentinel SuperPro functions and their Sentinel HASP equivalents, see Table 3: *Comparison of SuperPro API Functions and HASP Run-time API Functions* on page 19.
(See *Sentinel HASP Software Protection and Licensing Guide*, appendix “Sentinel HASP Run-time API Reference.”)
3. Protect your software using Sentinel HASP Envelope.
(See *Sentinel HASP Software Protection and Licensing Guide*, chapter “Sentinel HASP Envelope Protection.”)
4. Follow the instructions in the *Sentinel HASP Software Protection and Licensing Guide* to distribute your software.
(See *Sentinel HASP Software Protection and Licensing Guide*, chapter “Distributing Sentinel HASP with Your Software.”)
5. Ensure that all customers who receive the Sentinel HASP-protected software also receive HASP HL keys.

Migration Path 2—HASP and SuperPro Combined Implementation

This two-stage migration path enables you to phase out your installation base of SuperPro keys over time, without necessitating immediate recall and replacement of the SuperPro keys and without having to continue their distribution. To achieve this status, you create a version of your software that is able to identify both SuperPro and HASP HL keys. This could be a new version of your software or the current version, with the ability to work with a HASP HL key. You can then start distributing HASP HL keys to all new customers, while existing users continue to use the SuperPro keys.

The time that you wait before moving from one stage to the next is entirely at your discretion. You can even skip Stage 1 and proceed directly to Stage 2.

The following diagram summarizes the two stages for Migration Path 2.

Stage	1	2
Effort	Medium	Medium
Install base	Remains Sentinel SuperPro	Replace with HASP HL v3.21
Keys for new customers	HASP HL v3.21	HASP HL v3.21
Protection process	<ul style="list-style-type: none"> • Leave SuperPro API implementation • Implement Sentinel HASP Run-time API in your code • Switch between the above implementations depending on the connected key 	<ul style="list-style-type: none"> • Remove SuperPro implementation • Implement Sentinel HASP Run-time API in your code and protect using Sentinel HASP Envelope
Security level	Same as SuperPro API only *	Very high
Flexibility level (licensing, portability)	Medium	Very high

* Due to API-only implementation

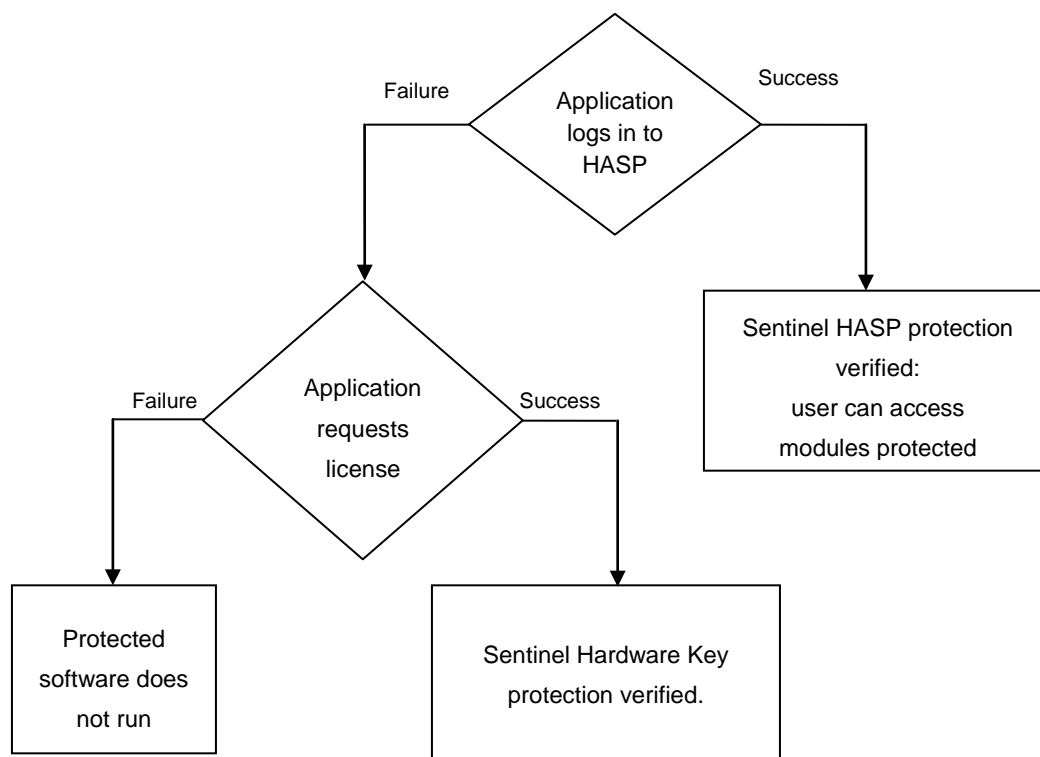
Stage 1: Combining Sentinel SuperPro with Sentinel HASP Protection

When your software runs, it attempts to log in to a HASP HL key. If a HASP HL key is detected, Sentinel HASP protection is used. If a HASP HL key is not detected, the software requests a license from a SuperPro key. If a SuperPro key is detected and the license granted, Sentinel SuperPro protection is used.

To maximize security and implement the higher level of protection provided by Sentinel HASP Envelope, concurrently with the Sentinel SuperPro protection of your software, you can protect Sentinel SuperPro-protected files or modules using the Sentinel HASP Run-time API. Consider also using Sentinel HASP Envelope to protect any individual files that are not protected by Sentinel SuperPro. Applications that are protected solely by Sentinel HASP can only be executed using a HASP HL key.

Sentinel HASP-protected applications have greater security than those protected by Sentinel SuperPro alone. If a SuperPro key is used, modules protected with Sentinel SuperPro will continue to function, but modules protected with Sentinel HASP will not run.

The following flowchart shows the sequential flow when the protected software executes in Stage 1:



Implementing Stage 1

The following procedure details the steps required to implement Stage 1 of the SuperPro-to-Sentinel HASP migration process. Where relevant, you are pointed to additional information in the *Sentinel HASP Software Protection and Licensing Guide*.

To implement both Sentinel HASP and SuperPro functionality:

1. If you have not already done so, install Sentinel HASP Vendor Suite and introduce your Sentinel HASP Vendor keys. As part of the Vendor key introduction process, Sentinel HASP generates customized Sentinel HASP Run-time API libraries for your Vendor Code. (For more information, see the *Sentinel HASP Installation Guide*.)
 2. Integrate the Sentinel HASP RTE Installer into your application. (See *Sentinel HASP Software Protection and Licensing Guide*, chapter “Distributing Sentinel HASP with Your Software.”)
 3. Include your Sentinel HASP Run-time API header files in your project. Do **not** remove included Sentinel SuperPro headers. (See *Sentinel HASP Software Protection and Licensing Guide*, chapter “Sentinel HASP Run-time API Protection.”)
 4. To enable your software to work with SuperPro or Sentinel HASP protection, implement the decision tree on page 11 of this document, as follows:
 - a. Use the Sentinel HASP Run-time API to log in to a Sentinel HASP protection key. If the login is successful, Sentinel HASP protection is invoked. (See *Sentinel HASP Software Protection and Licensing Guide*, chapter “Sentinel HASP Run-time API Protection” and appendix “Sentinel HASP Run-time API Reference.”)
 - b. If the login to Sentinel HASP fails, request license using the Sentinel SuperPro API. If the license is granted, Sentinel SuperPro protection is invoked.
 - c. If the Sentinel SuperPro license request fails, the behavior of the application when no key is detected is invoked.
- Note:** You can optionally enhance the security of selected items in your application by protecting them using Sentinel HASP Envelope. For maximum security, any file you choose to protect using the Sentinel HASP Run-time API, including a DLL, should also be protected using Sentinel HASP Envelope. You can also protect code snippets and other data using the API. These protected items will only be accessible when a HASP HL key is connected.
- Important:** Do not protect the entire application with Sentinel HASP Envelope, because doing so will disable the use of SuperPro keys.
5. Supply all new customers with HASP HL keys. Only these customers can access modules protected with Sentinel HASP.
 6. Gradually replace your install base of SuperPro keys with HASP HL keys, at your convenience.

Stage 2: Full Implementation of Advanced Sentinel HASP Functionality

Stage 2 enables you to fully implement the advanced functionalities of the Sentinel HASP system, thus gaining the benefit of its increased security and licensing capabilities. After you implement full Sentinel HASP protection, all customers using this version of your software must use HASP HL keys.

Implementing Stage 2

The following procedure details the steps required to implement Stage 2 of the SuperPro-to-HASP migration process. Where relevant, you are pointed to additional information in the *Sentinel HASP Software Protection and Licensing Guide*.

To implement advanced Sentinel HASP functionality:

1. If you have not already implemented Stage 1, perform steps 1-3 of Stage 1 in order to complete the following:
 - a. Install Sentinel HASP Vendor Suite and introduce your Sentinel HASP Vendor keys. As part of the Sentinel HASP Vendor key introduction process, Sentinel HASP generates customized Sentinel HASP Run-time API libraries for your Vendor Code.
(For more information, see the *Sentinel HASP Installation Guide*.)
 - b. Integrate the Sentinel HASP RTE Installer into your application.
(See *Sentinel HASP Software Protection and Licensing Guide*, chapter “Distributing Sentinel HASP with Your Software.”)
 - c. Link the Sentinel HASP Run-time API library to the application to be protected.
2. Replace all calls to Sentinel SuperPro in the code with calls to HASP HL keys.
For a list of Sentinel SuperPro functions and their Sentinel HASP equivalents, see Table 3: *Comparison of SuperPro API Functions and HASP Run-time API Functions* on page 19.
(See *Sentinel HASP Software Protection and Licensing Guide*, appendix “Sentinel HASP Run-time API Reference.”)
3. Protect your software using Sentinel HASP Envelope.
(See *Sentinel HASP Software Protection and Licensing Guide*, chapter “Sentinel HASP Envelope Protection.”)
4. Follow the instructions in the *Sentinel HASP Software Protection and Licensing Guide* to distribute your software.
(See *Sentinel HASP Software Protection and Licensing Guide*, chapter “Distributing Sentinel HASP with Your Software.”)
5. Ensure that all customers who receive the Sentinel HASP-protected software also receive HASP HL keys.

Migration Path 3—Gradual Migration from SuperPro to HASP Using a Launcher Application

This migration path enables you to phase out your installation base of Sentinel SuperPro hardware keys—without necessitating the recall and replacement of the keys, and without having to continue their distribution.

The migration is achieved by creating two versions of your software—one protected using SuperPro, and the other protected using Sentinel HASP Envelope. The two versions of the software are bundled with a launcher application. If the launcher detects that a Sentinel HASP key is accessed, the Sentinel HASP Envelope-protected version of your software is launched. If a Sentinel HASP key is not detected, the SuperPro-protected version of your software is launched.

This migration path enables you to support existing users who already have SuperPro, and to provide new users with the added protection available with Sentinel HASP protection keys.

When you are ready to fully switch to Sentinel HASP protection and licensing functionality, many of your users will already be using Sentinel HASP protection keys.

The following diagram summarizes the two stages for Migration Path 3.

Stage	1	2
Effort	Low	Medium
Install base	Remains Sentinel SuperPro	Replace with HASP HL v3.21
Keys for new customers	HASP HL v3.21	HASP HL v3.21
Protection process	<ul style="list-style-type: none"> • Create two binaries – one protected using SuperPro, the other using Sentinel HASP Envelope • Create a launcher application using the Sentinel HASP Run-time API to search for a Sentinel HASP protection key • Switch between above binaries, depending on connected key 	<ul style="list-style-type: none"> • Remove Sentinel implementation • Implement the Sentinel HASP Run-time API in your code and protect using Sentinel HASP Envelope
Security level	Same as SuperPro only	Very high
Flexibility level (licensing, portability)	Medium	Very high

Stage 1: Initial Implementation of Sentinel HASP Functionality

During Stage 1 of the migration process, you create two versions of your software—one protected using SuperPro, and the other protected using Sentinel HASP Envelope. The two versions of the software are bundled with a launcher application. The launcher application detects which version of your software to use.

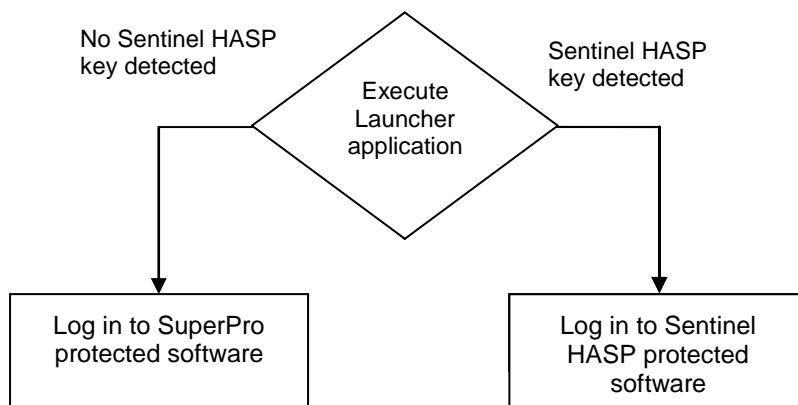
Implementing Stage 1

The following procedure details the steps required to implement the SuperPro-to-Sentinel HASP migration process. Where relevant, you are pointed to additional information in the Sentinel HASP documentation.

To implement Sentinel HASP functionality:

1. If you have not already done so, install Sentinel HASP Vendor Suite and introduce your Sentinel HASP Vendor keys.
(For more information, see the *Sentinel HASP Installation Guide*.)
2. Create a version of your software (for example, `program_superpro.exe`) and implement SuperPro protection using the Sentinel SuperPro Shell, Sentinel SuperPro API, or both.
3. Create a version of your software (for example, `program_hasp.exe`) and implement Sentinel HASP protection, using Sentinel HASP Envelope, the Sentinel HASP Run-time API, or both.
4. Create a launcher application using the Sentinel HASP Run-time API that will detect whether a Sentinel HASP protection key is accessible. Program the following behavior:
 - a. If a Sentinel HASP protection key is detected, the launcher launches `program_hasp.exe`.
 - b. If a Sentinel HASP protection key is not detected, the launcher launches `program_superpro.exe`.
5. Package both versions of the software with the launcher application.
6. Follow the instructions in the *Sentinel HASP Software Protection and Licensing Guide* to distribute your software.
(See *Sentinel HASP Software Protection and Licensing Guide*, chapter “Distributing Sentinel HASP with Your Software.”)
7. Ensure that all customers who receive the Sentinel HASP-protected software also receive HASP HL keys.

The following flowchart shows the flow when the application launcher executes:



Stage 2: Full Implementation of Sentinel HASP Functionality

Stage 2 enables you to fully implement the functionalities of the Sentinel HASP system, thus gaining the benefit of its increased security and licensing capabilities. After you implement full Sentinel HASP protection, all customers using this version of your software must use Sentinel HASP protection keys.

Implementing Stage 2

The following procedure details the steps required to implement Stage 2 of the SuperPro-to-HASP migration process. Where relevant, you are pointed to additional information in the Sentinel HASP documentation.

To implement full Sentinel HASP functionality:

1. Replace all calls to Sentinel SuperPro in the code with calls to HASP HL keys.
For a list of Sentinel SuperPro functions and their Sentinel HASP equivalents, see Table 3: *Comparison of SuperPro API Functions and HASP Run-time API Functions* on page 19.
(See *Sentinel HASP Software Protection and Licensing Guide*, appendix “Sentinel HASP Run-time API Reference.”)
2. Protect your software using Sentinel HASP Envelope.
(See *Sentinel HASP Software Protection and Licensing Guide*, chapter “Sentinel HASP Envelope Protection.”)
3. Follow the instructions in the *Sentinel HASP Software Protection and Licensing Guide* to distribute your software.
(See *Sentinel HASP Software Protection and Licensing Guide*, chapter “Distributing Sentinel HASP with Your Software.”)
4. Ensure that all customers who receive the Sentinel HASP-protected software also receive Sentinel HASP protection keys.

Appendix A: Sentinel HASP and SuperPro Comparison Tables

Table 1: Comparison of HASP HL Firmware v.3.21 Keys and Sentinel SuperPro Keys

Model Type	HASP HL	Sentinel SuperPro
Basic <ul style="list-style-type: none"> ◆ No read/write memory functionality ◆ Perpetual license ◆ Locally connected key 	HASP HL Basic	None
Memory <ul style="list-style-type: none"> ◆ Read/write and read-only memory ◆ Locally connected key 	HASP HL Pro <ul style="list-style-type: none"> ◆ 112 bytes R/W + 112 bytes ROM HASP HL Max <ul style="list-style-type: none"> ◆ 4 KB R/W + 2 KB ROM 	SuperPro <ul style="list-style-type: none"> ◆ 112 bytes SuperPro XM <ul style="list-style-type: none"> ◆ 464 bytes
Time <ul style="list-style-type: none"> ◆ Real-time clock ◆ Read/write and read-only memory ◆ Locally connected key 	HASP HL Time <ul style="list-style-type: none"> ◆ RTC ◆ 4 KB R/W + 2 KB ROM 	None
Net <ul style="list-style-type: none"> ◆ Read/write and read-only memory ◆ Network-based licensing 	HASP HL Net <ul style="list-style-type: none"> ◆ 4 KB R/W + 2 KB ROM ◆ Max. no. of concurrent users: 10, 50, 250+ 	SuperProNet <ul style="list-style-type: none"> ◆ 112 bytes SuperProNet XM <ul style="list-style-type: none"> ◆ 464 bytes Max no. of concurrent users: 1, 2, 3, 5, 10, 25, 50+
Net and Time <ul style="list-style-type: none"> ◆ Real-time clock ◆ Read/write and read-only memory ◆ Network-based licensing 	HASP HL NetTime <ul style="list-style-type: none"> ◆ RTC ◆ 4 KB R/W + 2 KB ROM ◆ Max. no. of concurrent users: 10, 50, 250 users 	None
Drive <ul style="list-style-type: none"> ◆ Read/write and read-only memory ◆ Extended mass storage 	HASP HL Drive <ul style="list-style-type: none"> ◆ 4 KB R/W + 2 KB ROM ◆ 2 GB or 4 GB USB Mass Storage drive 	None

Table 2: Sentinel SuperPro and Sentinel HASP Tool Equivalents

Sentinel SuperPro Tools	Sentinel HASP Tools
Encoding Sentinel keys (binding of keys to a specific ISV)	Keys are pre-encoded at SafeNet production site. Use your unique Sentinel HASP Vendor Code (stored in the Sentinel HASP Vendor keys)
Sentinel SuperPro Developer's Toolkit	Sentinel HASP Vendor Suite
Shell	Sentinel HASP Envelope (part of Sentinel HASP Vendor Suite)
License Manager	Sentinel HASP Business Studio (part of Sentinel HASP Vendor Suite)
API Explorer	Sentinel HASP ToolBox (part of Sentinel HASP Vendor Suite)
Sentinel Protection installer	Sentinel HASP Run-time Environment installer
Sentinel System Driver (legacy)	Sentinel HASP Run-time Environment installer
Sentinel Protection Server	Sentinel HASP Run-time Environment installer
Sentinel License Monitor	Sentinel HASP Admin Control Center (part of the Sentinel HASP Run-time Environment)
Sentinel SuperPro Medic	Sentinel HASP Admin Control Center (part of the Sentinel HASP Run-time Environment)
Field Exchange utility	Sentinel HASP Remote Update System (RUS)
Serial number	HASP ID

Table 3: Comparison of SuperPro API Functions and HASP Run-time API Functions

Sentinel SuperPro API Function*	Sentinel HASP Run-time API Function
RNBOSproActivate()	AES algorithm is always active. To use a different encryption key, log in using <code>hasp_login()</code> to a different Feature ID.
RNBOSproCleanUp()	Not required in Sentinel HASP—performed automatically by <code>hasp_logout()</code> Note: <code>hasp_free()</code> is required in C code after calling <code>hasp_get_sessioninfo()</code> and <code>hasp_update()</code> functions.
RNBOSproDecrement()	Not required in Sentinel HASP—performed automatically by <code>hasp_login()</code> when logging in to Features with execution counters
RNBOSproEnumServer()	Not required in Sentinel HASP—performed automatically by <code>hasp_login()</code> Logging in to a specific server is possible using <code>hasp_login_scope()</code> .
RNBOSproExtendedRead()	<code>hasp_get_info()</code>
RNBOSproFindFirstUnit()	<code>hasp_login()</code> to Feature ID 0
RNBOSproFindNextUnit()	Not required in Sentinel HASP—performed automatically by <code>hasp_login()</code> Logging in to a specific connected key is possible using <code>hasp_login_scope()</code> .
RNBOSproFormatPacket()	Not required in Sentinel HASP—performed automatically by <code>hasp_login()</code>
RNBOSproGetContactServer()	<code>hasp_get_sessioninfo()</code>
RNBOSproGetFullStatus()	<code>hasp_get_sessioninfo()</code>
RNBOSproGetHardLimit()	<code>hasp_get_sessioninfo()</code>
RNBOSproGetKeyInfo()	<code>hasp_get_info()</code> or <code>hasp_get_sessioninfo()</code>
RNBOSproGetKeyType()	<code>hasp_get_info()</code> or <code>hasp_get_sessioninfo()</code>
RNBOSproGetSubLicense	<code>hasp_login()</code> or <code>hasp_login_scope()</code>
RNBOSproGetVersion()	<code>hasp_get_info()</code> or <code>hasp_get_sessioninfo()</code>
RNBOSproInitialize()	Not required in Sentinel HASP—performed automatically by <code>hasp_login()</code>
RNBOSproOverwrite()	Not required in Sentinel HASP
RNBOSproQuery()	<code>hasp_encrypt()</code> <code>hasp_decrypt()</code>
RNBOSproRead()	<code>hasp_read()</code>
RNBOSproReleaseLicense()	<code>hasp_logout()</code>
RNBOSproSetConfigFile()	Run-time Environment configuration can be performed using the Admin Control Center user interface. The location of the configuration file is not modifiable. The file path is typically Program Files\Common Files\Aladdin Shared\HASP\hasplm.ini .

Sentinel SuperPro API Function*	Sentinel HASP Run-time API Function
RNBOSproSetContactServer()	Not required in Sentinel HASP—performed automatically by hasp_login()
RNBOSproSetHeartBeat()	Not required in Sentinel HASP
RNBOSproSetProtocol()	Not required in Sentinel HASP
RNBOSproSetSharedLicense()	Not required in Sentinel HASP
RNBOSproWrite()	hasp_write()

* Sentinel SuperPro functions that are not listed are obsolete.