

# Product Description

## SafeSign Identity Client Standard Version 3.0 for MAC OS X

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## Document Information

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## About the Document

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This product description defines the features and supported configurations of SafeSign Identity Client Standard for MAC OS X and that were tested by its developer A.E.T. Europe B.V. and describes its installation process.

## 1 Introduction

SafeSign Identity Client for MAC OS X is a software package to enhance the security of applications that support PKCS #11 by hardware tokens, i.e. smart cards, USB tokens or SIM cards.

The SafeSign Identity Client package provides the SafeSign Identity Client PKCS #11 library for MAC OS X that allows the user to generate and store public and private data on a personal token.

## 2 SafeSign Identity Client for MAC OS X Functionality

SafeSign Identity Client for MAC OS X includes all functionality necessary to use hardware tokens in a variety of Public Key Infrastructures (PKIs). This includes:

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PKCS #11 for integration with applications supporting PKCS #11, including Mozilla Firefox.

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PKCS #12 support.

---

PKCS #15 support.

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Product Description with installation instructions for end users (no developer documentation). All documentation is in the English language.

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PKG package for installation on the MAC OS X platform.

---

Token Administration Utility to initialise the token, change PIN, etc.

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## 3 Features

In principle, SafeSign Identity Client Standard Version 3.0 for MAC OS X supports all the features of SafeSign Identity Client version 3.0 for Windows, if such functionality is available for the MAC OS X platform.

### 3.1 Multi-token support

SafeSign Identity Client version 3.0 for MAC OS X supports multiple tokens.

Newly supported tokens in SafeSign Identity Client Standard Version 3.0 are:

- IDpendant IDp 1000 (Java Card 2.2.1 USB Token)
- NXP JCOP21 v2.3.1 (Java Card 2.2.1 smart card)
- NXP JCOP31 v2.3.1 (Java Card 2.2.1 smart card)
- NXP JCOP41 v2.3.1 (Java Card 2.2.1 smart card)
- Siemens CardOS 4.3B 32K/64K

Refer to the list of tested configurations which (USB) tokens and readers have been tested ([paragraph 4.3](#)).

## 4 Tested Configurations

SafeSign Identity Client Standard version 3.0 for MAC OS X was tested with the smart cards, USB tokens, smart card readers, applications and Macintosh environments listed below.

Note that though SafeSign Identity Client is designed to support an extensive range of tokens, only a specific number of tokens / readers (combinations) have been tested with MAC OS X, as part of AET's Quality Assurance procedures.

Note that this does not imply that all tested tokens / readers (combinations) work flawlessly, nor that other tokens / readers (combinations) do not work.

### 4.1 SafeSign Identity Client version

The version numbers of the components installed by SafeSign Identity Client Standard version 3.0 for MAC OS X, release 3.0, are:

Description	File name	File version
Java Card Handling Library	libaetjcss.dylib	3.0.1737
PKCS #11 Cryptoki Library	libaetpkss.dylib	3.0.1737
Token Administration Utility	tokenadmin	3.0.0

This information can also be found in the *Version Information* dialog of the Token Administration Utility.

### 4.2 Operating System

SafeSign Identity Client Standard version 3.0 for MAC OS X comes in (separate) standard versions for the following environments:

- MAC OS X 10.4
- MAC OS X 10.5

### 4.3 Tokens

SafeSign Identity Client Standard version 3.0 for MAC OS X supports the following tokens:

- STARCOS<sup>®</sup> smart cards and USB tokens developed by Giesecke & Devrient (G&D), including STARCOS 3.0;
- Sm@rtCafé smart cards and USB tokens developed by Giesecke & Devrient (G&D), including Sm@rtCafé Expert 64k;
- Java Card v2.1.1 / Open Platform 2.0.1 compliant Java smart cards;
- Java Card v2.2+ / GlobalPlatform 2.1.1 compliant Java smart cards, including JCOP21, JCOP41 and the CrypToken MX2048-JCOP USB Token;
- CardOS smart cards developed by Siemens: CardOS 43B.

## 4.4 Smart Card Readers

SafeSign Identity Client Standard version 3.0 for MAC OS X supports the following smart card readers and USB tokens:

- CryptToken MX2048-JCOP USB token (using the native CCID MAC OS X driver which is part of the operating system);
- Gemplus GemPC Twin (using the native CCID MAC OS X driver which is part of the operating system);
- IDp1000 USB token (using IFDHandler 3.0);
- Omnikey CardMan Desktop USB 3121 (using the native CCID MAC OS X driver which is part of the operating system);
- SCM SCR3311 (using the SCM driver 'scmccid\_5.0.8\_mac.zip').

## 4.5 Applications

SafeSign Identity Client Standard version 3.0 for MAC OS X 10.4 supports the following applications:

- Mozilla Firefox version 3.0.3
- Mozilla Thunderbird version 2.0.0.17

## 5 Installation

### 5.1 Installation Process

Note that users need to have sufficient privileges and basic knowledge of Mac OS X to install SafeSign for MAC OS X.



#### Note

Please note that AET strongly recommends using the native CCID MAC OS X driver which is part of the operating system, both on PowerPCs and Intel based Macintosh PCs.

1

Save the installation file (.pkg.zip) to a location on your MAC computer and double-click it.

This will result in an installer package that can be installed.

➔ Click the file to install

2

This will open the *Welcome to the SafeSign Installer* window, introducing the package contents:

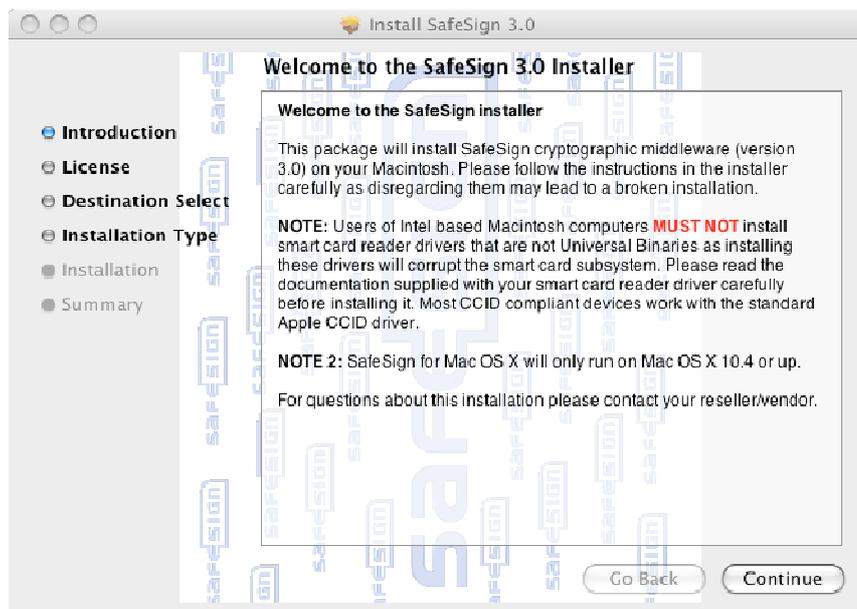


Figure 1: Install SafeSign 3.0: Welcome to the SafeSign 3.0 Installer

➔ Carefully read the introduction and click **Continue** to proceed to the next step of the installation process

➔ Note that SafeSign Identity Client for MAC OS X will only run on MAC OS X 10.4 or up

**3**

The next window will display the SafeSign License Agreement:

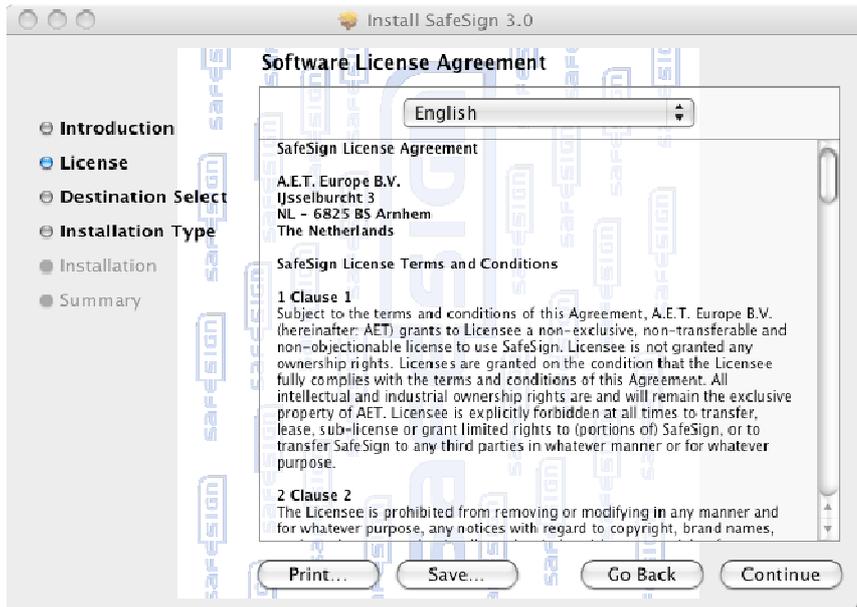


Figure 2: Install SafeSign 3.0: Software License Agreement

Please read the License Agreement carefully and scroll down to read the whole text.

➔ Click **Continue** when you have read and understood the License Agreement



**Note**

*In order to go back to the previous step in the installation process, click **Go Back***

*In order to quit the installation process, click the red button in the top left corner of the dialog.*

**4**

Upon clicking **Continue**, you will be asked to agree to terms of the software license agreement to continue installation:

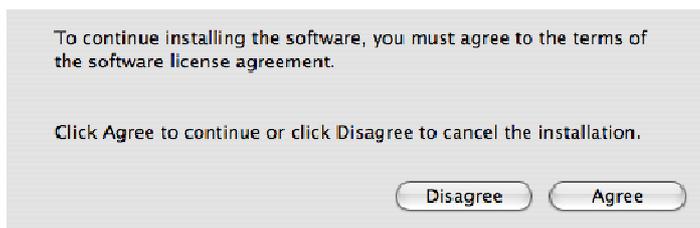


Figure 3: Software License Agreement: Agree to the terms

➔ Click **Agree** when you agree to the terms of the Software License Agreement and wish to continue installing SafeSign.

If you click **Disagree**, you will return to the *Software License Agreement* window.

**5**

Upon clicking **Agree** to accept the terms of the Software License Agreement (in [Figure 3](#)), you will be asked to select a destination for SafeSign Identity Client to be installed.

This will allow you to select a destination volume to install the SafeSign Identity Client software in.

In our example, the destination volume will be the local hard disk (called 'Macintosh HD').

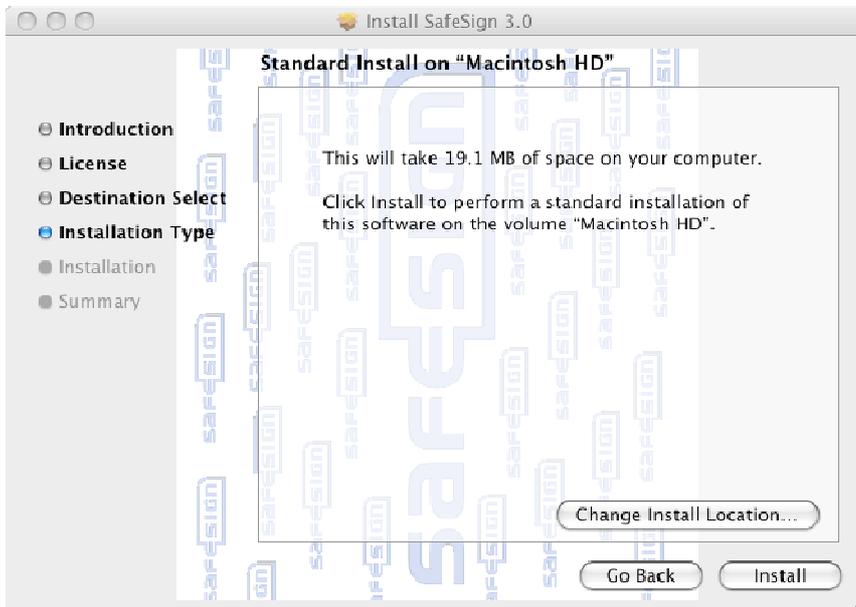


Figure 4: Install SafeSign 3.0: Standard Install

➔ When you have selected the destination to install SafeSign Identity Client in, click **Install**

If you want to change the destination to install SafeSign Identity Client in, click **Change Install Location**

**6**

Upon clicking **Install**, you may be asked to authenticate with username and password:



Figure 5: Install: Authenticate

This may happen if you do not have sufficient privileges (because you need sufficient rights to install the SafeSign software).

➔ Enter the name and password of the root (administrator) and click **OK** to continue

**7**

Upon clicking **OK**, SafeSign Identity Client will be installed.

You will be informed when the installation process is completed:

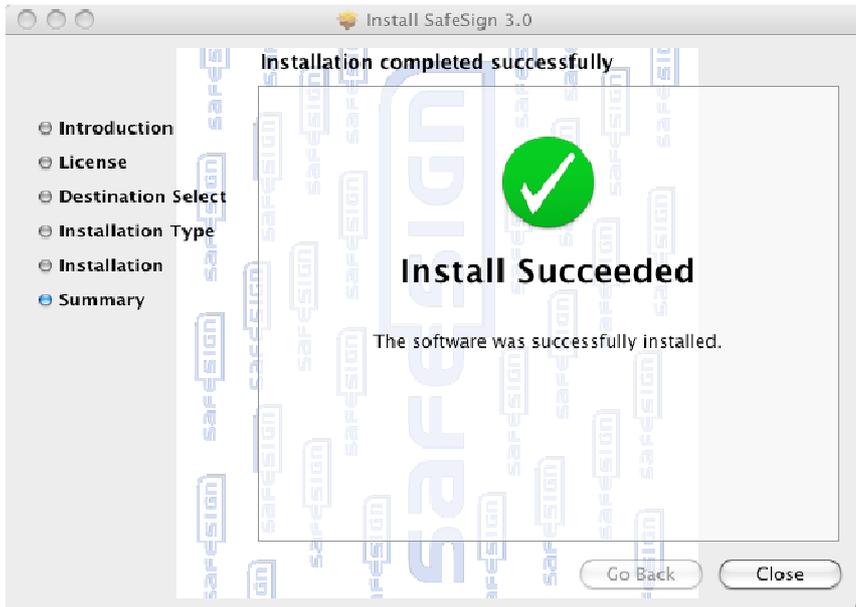


Figure 6: Install SafeSign: The software was successfully installed

➔ Click **Close** to close the SafeSign Identity Client Installer.

## 5.2 Verify installation

When SafeSign Identity Client is installed, you can verify that installation is successful by checking for the presence of the Token Administration Utility (*tokenadmin.app* in the *Applications* folder):

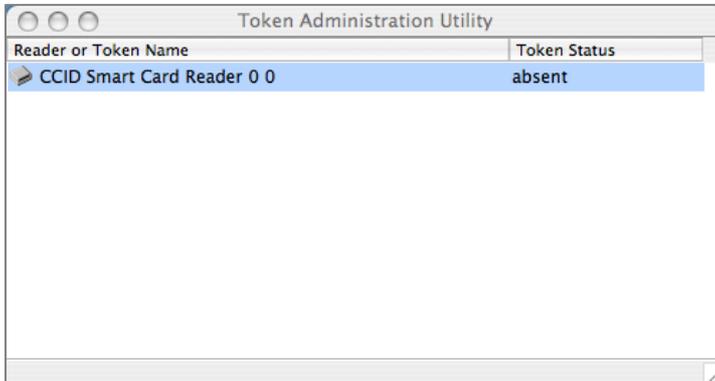


Figure 7: Token Administration Utility: CCID Smart Card Reader

Note that the native MAC OS X CCID smart card reader driver is installed and that a CCID compliant smart card reader is attached (in our case, the CardMan 3121 USB smart card reader).

When you insert a token, the Token Administration Utility will either display that a blank token is inserted (that can be initialised) or that a token with a token label has been inserted (as below):

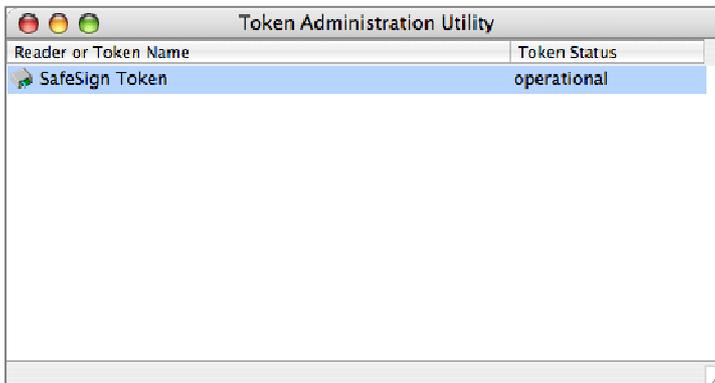


Figure 8: Token Administration Utility: SafeSign Token

All features of the Token Administration Utility are available to you (apart from the Task Manager). Refer to the SafeSign Identity Client Token Administration Utility User Guide for Windows.

## 6 Installation of SafeSign Identity Client Security Module

When you have installed SafeSign Identity Client, you may want to use SafeSign Identity Client with such applications as Firefox and/or Thunderbird or other (PKCS #11) applications that support the use of tokens.

In order to do so, you should install or "load" the SafeSign Identity Client PKCS #11 library as a security module in these applications<sup>1</sup>.

### 6.1 Firefox

**1**

In Firefox, go to **Firefox > Preferences > Advanced > Encryption > Security Devices:**

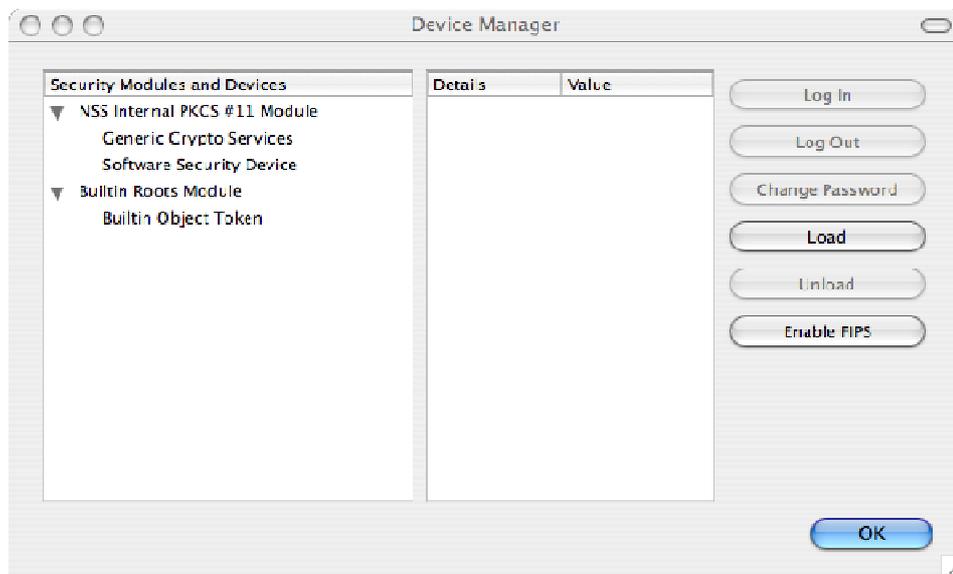


Figure 9: Firefox Device Manager: Security Modules and Devices

The SafeSign Identity Client PKCS #11 module is not yet installed.

→ Click on **Load** to load a new module

**2**

Upon clicking on **Load**, you can enter the information for the module you want to add:

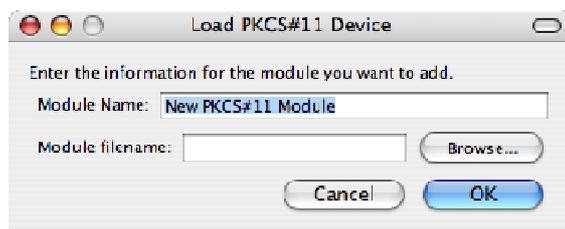


Figure 10: Firefox Device Manager: Load PKCS#11 Device

<sup>1</sup> This is customary for PKCS #11 applications, where you need to load the cryptographic library or make reference to the library to be used for cryptographic / token support.

- 3** → Enter a name for the security module, e.g. *SafeSign Identity Client* and type in the name of the SafeSign Identity Client PKCS #11 library (i.e. *libaetpkss.dylib*):

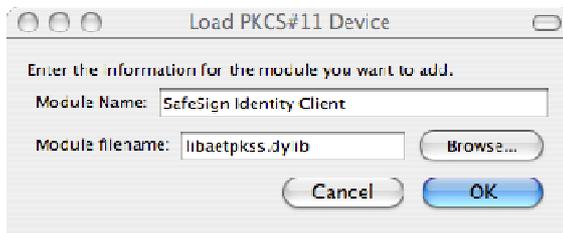


Figure 11: Firefox Device Manager: Load SafeSign

- Click **OK**

- 4** You will be asked to confirm installation of the security module:



Figure 12: Firefox Device Manager: Are you sure you want to install this security module?

- Click **OK** to continue installation

- 5** You will be informed when the module is successfully loaded:

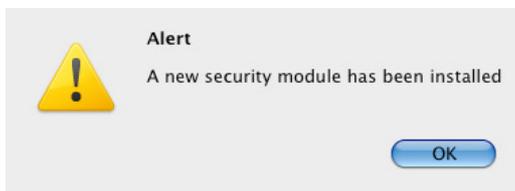


Figure 13: Firefox Device Manager: A new security module has been installed

- Click **OK**

The SafeSign Identity Client PKCS #11 Library will now be available as a security module in Firefox:

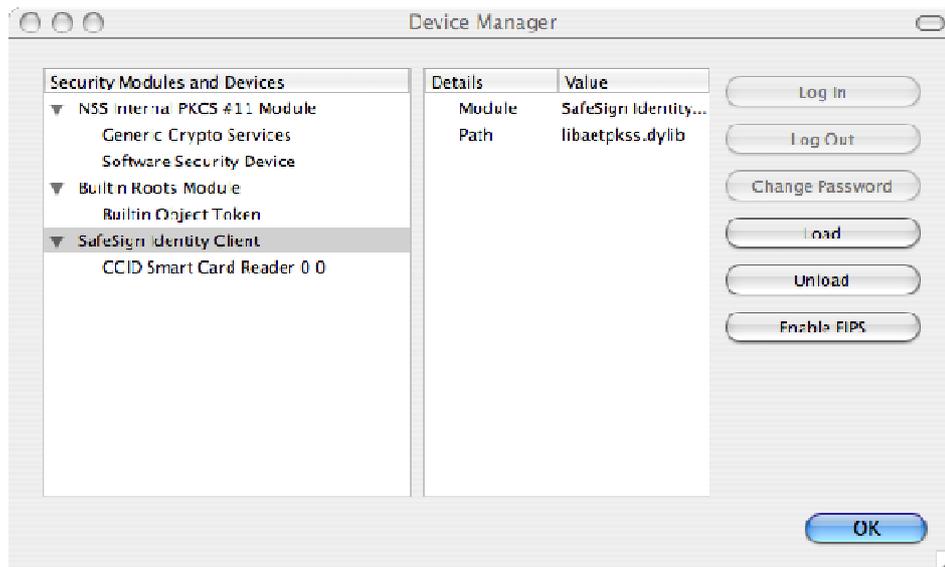


Figure 14: Firefox Device Manager: SafeSign Security Module

Under the name of the security module ('SafeSign Identity Client', as specified in [Figure 11](#)), the available devices are displayed.

In this case, there is only one device installed, a smart card reader identified by the label 'CCID Smart Card Reader'. No token is inserted in the reader.

When the token is inserted, the label of the token will be displayed:

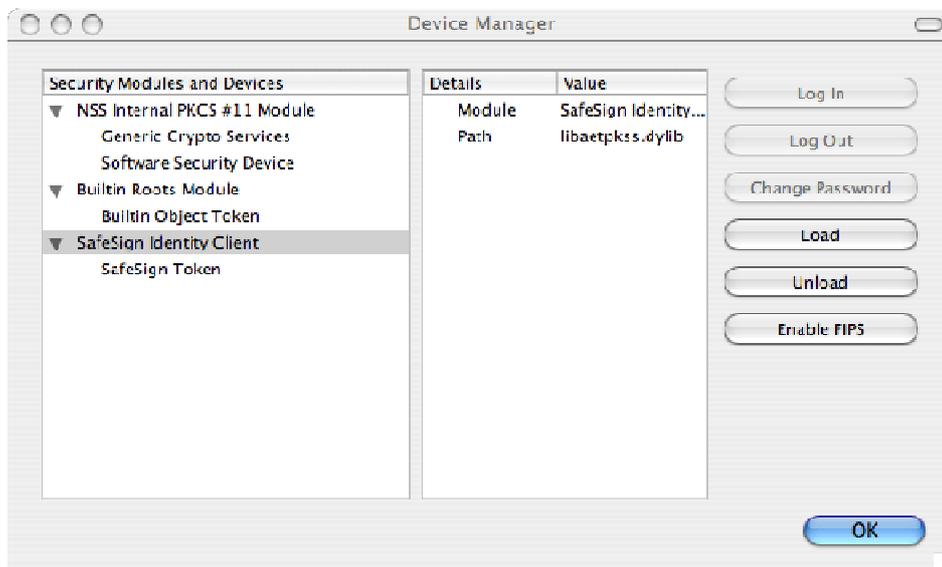


Figure 15: Firefox Device Manager: Token inserted

Note that there may be different reader and token combinations (so-called "slots"), for example, a smart card in a smart card reader or a USB token.

You can now use your SafeSign Identity Client token in Firefox for such operations as web authentication, where you will be asked to select a device and enter the PIN:

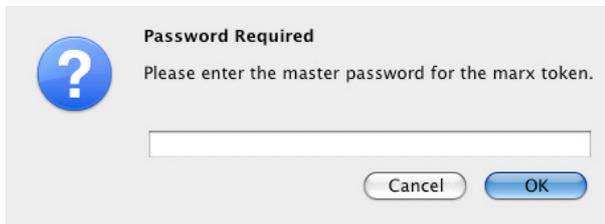


Figure 16: Firefox: Prompt



## Installation Fails

When installation of the SafeSign Identity Client PKCS #11 library as a security module in Firefox fails, the following prompt will be shown:

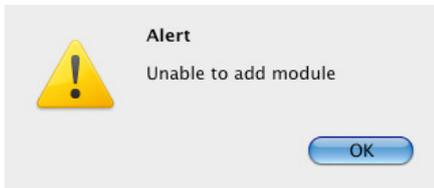


Figure 17: Firefox: Unable to add module

➔ Verify that you have provided the correct name, i.e. *libaetpkcs.dylib* (located in */usr/local/lib*)



## Delete Module

It is possible to delete the SafeSign Identity Client security module, by clicking **Unload**.

Upon clicking **Unload**, the module will be deleted:



Figure 18: Firefox: External security module successfully deleted

## 6.2 Thunderbird

**1**

In Thunderbird, go to **Thunderbird > Preferences > Advanced > Certificates > Security Devices**:

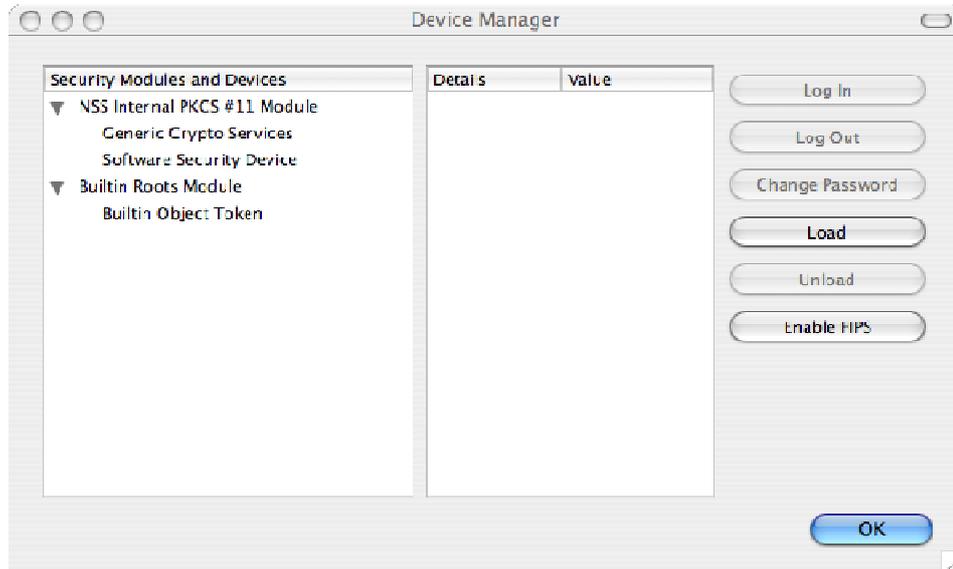


Figure 19: Thunderbird Device Manager: Security Modules and Devices

The SafeSign Identity Client PKCS #11 module is not yet installed.

→ Click on **Load** to load a new module

**2**

Upon clicking on **Load**, you can enter the information for the module you want to add:

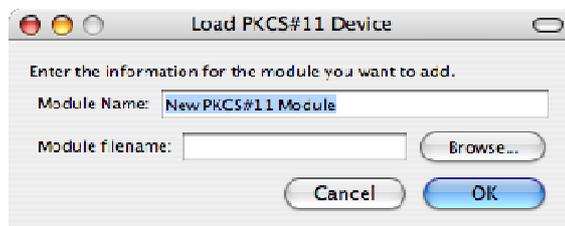


Figure 20: Thunderbird Device Manager: Load PKCS#11 Device

**3**

→ Enter a name for the security module, e.g. *SafeSign Identity Client* and type in the name of the SafeSign Identity Client PKCS #11 library (i.e. *libaetpkss.dylib*):

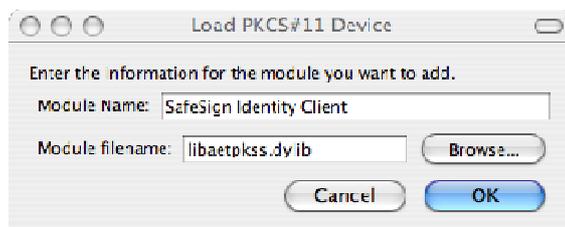


Figure 21: Thunderbird Device Manager: Load SafeSign

→ Click **OK**

**4** You will be asked to confirm installation of the security module:

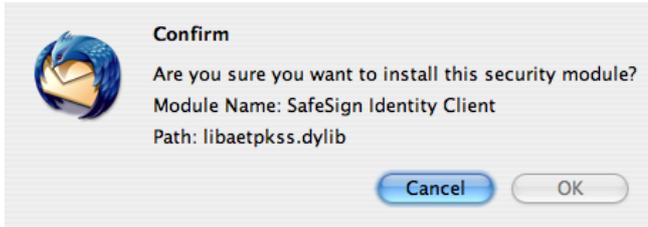


Figure 22: Thunderbird Device Manager: Are you sure you want to install this security module?

→ Click **OK** to continue installation

**5** You will be informed when the module is successfully loaded:

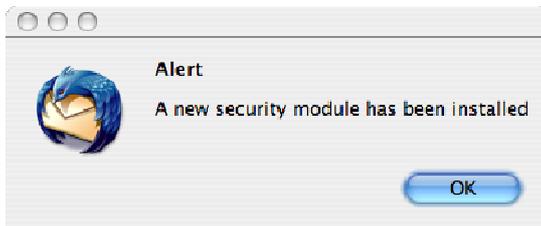


Figure 23: Thunderbird Device Manager: A new security module has been installed

→ Click **OK**

The SafeSign Identity Client PKCS #11 Library will now be available as a security module in Thunderbird:

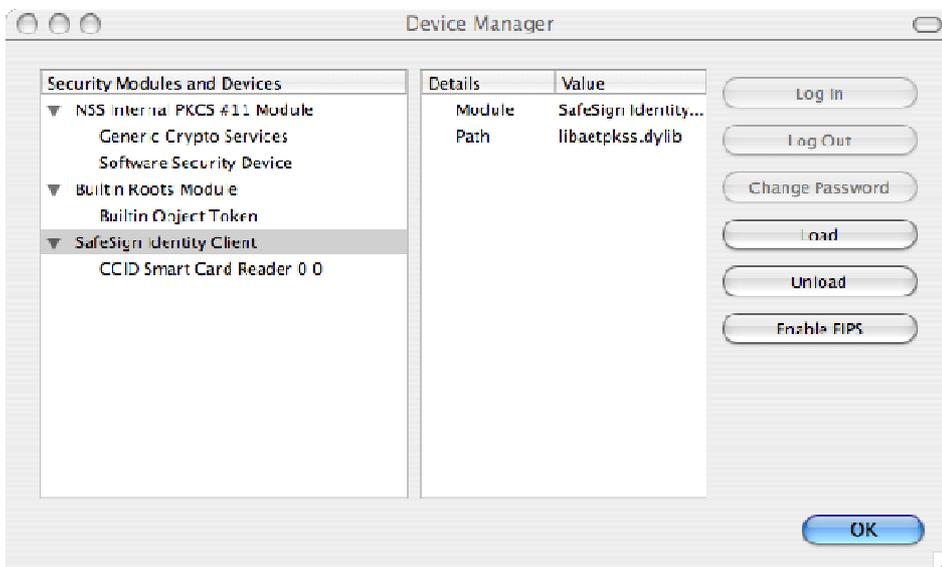


Figure 24: Thunderbird Device Manager: SafeSign Security Module

Under the name of the security module ('SafeSign Identity Client', as specified in [Figure 21](#)), the available devices are displayed.

In this case, there is only one device installed, a smart card reader identified by the label 'CCID Smart Card Reader'. No token is inserted in the reader.

When the token is inserted, the label of the token will be displayed:

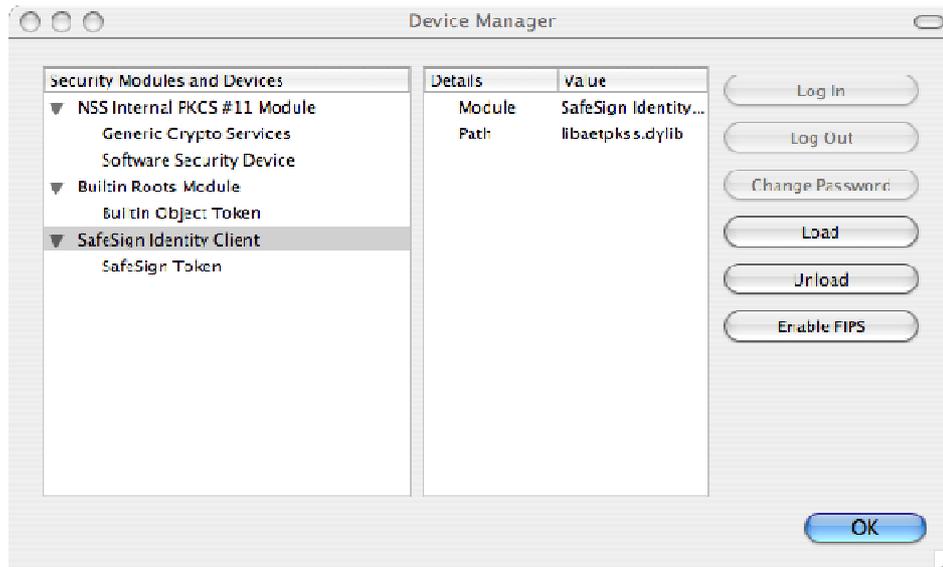


Figure 25: Thunderbird Device Manager: Token inserted

Note that there may be different reader and token combinations (so-called "slots"), for example, a smart card in a smart card reader or a USB token.

You can now use your SafeSign Identity Client token in Thunderbird for such operations as web authentication, where you will be asked to select a device and enter the PIN:

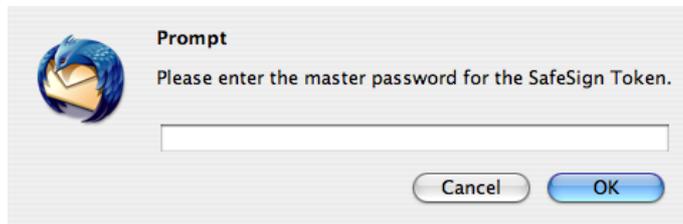


Figure 26: Thunderbird: Prompt



## Installation Fails

When installation of the SafeSign Identity Client PKCS #11 library as a security module in Thunderbird fails, the following prompt will be shown:

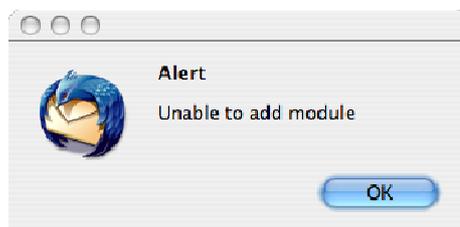


Figure 27: Thunderbird: Unable to add module

➔ Verify that you have provided the correct name, i.e. *libaetpkcs.dylib* (located in */usr/local/lib*)



## Delete Module

---

It is possible to delete the SafeSign Identity Client security module, by clicking **Unload**.

Upon clicking **Unload**, the module will be deleted:

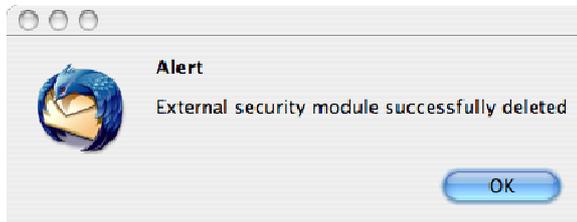


Figure 28: Thunderbird: External security module successfully deleted

---

## 7 Known Issues

1. In general, it is recommended to use the native CCID smart card reader driver included in MAC OS X, rather than installing the smart card reader drivers provided by the smart card reader supplier. Refer to the list of smart card readers tested for more information.
2. Note that users of Intel based Macintosh computers must not install smart card reader drivers that are not Universal Binaries, as installing these drivers will corrupt the smart card subsystem.
3. Tests have shown that the driver for the StarKey100 and StarKey400 USB token is not very stable and may present problems with token detection and initialisation.
4. SafeSign Identity Client version 3.0 for MAC OS X includes only a Token Administration Utility, no Token Management Utility.
5. In the Token Administration Utility, the Task Manager is not available.
6. Note that removal and re-insertion events are not detected (for example in the Token Administration Utility or in Mozilla applications), when the USB token and/or smart card reader is inserted or removed after the application is started. It is not possible from a PKCS#11 perspective to have readers and/or tokens appearing and disappearing on the fly (even if this is detected on PC/SC level).
7. In MAC OS X 10.4, when SafeSign is already installed before, you will be allowed to upgrade the installation, in which case instead of the button **Install**, there would be a button **Upgrade** (in [Figure 4](#)). This is not the case for MAC OS X 10.5.

## Appendix 1: How to remove smart card reader drivers

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AET recommends using the native CCID driver included in MAC OS X, for reasons of stability. If you have installed smart card reader drivers from your smart card reader manufacturer, you can remove / uninstall these.

### **CardMan 3121**

Select 'Go to Folder' and then `/usr/libexec/SmartCardServices/drivers/` and locate the file `'ifdokcm3121_macos_2.2.0.bundle'`.

Move this file to trash and then restart the computer. After restarting the computer, the Token Administration Utility will display 'CCID Smart Card Reader' (instead of 'OMNIKEY CardMan 3121').

### **StarKey100 / StarKey400**

Select 'Go to Folder' and then `/usr/local/pcsc/drivers/` and locate the file `'ifd-ePs2k.bundle'`.

Move this file to trash and then restart the computer. After restarting the computer, the Token Administration Utility will no longer display 'FT SCR2000'.