

EUTRON
INFOSECURITY



CryptoIdentity
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This hardware key is in compliance with the following test specification:
CEI EN 61000-4-2; CEI EN 61000-4-3; CISPR22

as required by :

CEI EN 61000-6-1, CEI EN 61000-6-2, CEI EN 61000-6-3, CEI EN 61000-6-4
which are specified for the following test:

- “ESD Immunity test”
- “Radiated radio-frequency and electromagnetic field immunity test”
- “Radiated Emission Verification”

In compliance with the “Essential Requisites” for the EMC Directive 89/336/EEC.



FCC ID: TFC-AAA

EUTRON Infosecurity S.r.l.
CryptoIdentity⁽¹⁾
Supply: 5V DC
Absorption: 20 mA

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

IMPORTANT REMARKS

Due to the limited space on the product shell, all FCC certification references are on this technical manual.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

CONFORMITY APPROVAL TO EN60529 (IP67)

This hardware key is in compliance with essential evaluation elements for the conformity approval to EN 60529 (IP67) concerning safety (EN 60529:1991-10 + EN 60529 corr:1993-05 + EN 60529/A1:2000-02) as required by LVD directive.

¹ The models subjected to this mark are the following: CryptoIdentity 5, CryptoIdentity ITSEC and CryptoIdentity FIPS.

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I INTRODUCTION TO CRYPTOIDENTITY AND CRYPTOKIT

This chapter provides an introduction to Cryptoidentity and CryptoKit.



For updated information and news about the Cryptoidentity USB token you could also visit: www.cryptoidentity.eutron.com

I. I WHAT IS CRYPTOIDENTITY

Cryptoidentity is an USB token, the size of a door-key, which includes a cryptographic chip and combines both the functions of a smartcard and its reader.

One of the major advantages of the Cryptoidentity is that, to access the digital credentials or protected objects stored into it, no reader is needed.

It is possible to store into the Cryptoidentity digital certificates, cryptographic keys or data and have them protected in the same way they would have been stored in an equivalent cryptographic smartcard.

You can use the Cryptoidentity to achieve strong authentication in the following scenarios:

- Virtual Private Networks (Microsoft VPN, CheckPoint, Cisco, Avaya, SSH Sentinel, etc.).
- User identification for remote banking, possibly using digital signatures for non-repudiation.
- Controlled access to restricted Internet sites.
- Performing secure B2B transactions.
- E-commerce, sale of services over the Internet authentication and encryption.
- Windows 2000 and Windows XP logon through Microsoft standard “smart card” logon mechanisms.
- Windows XP native support for IEEE 802.1X (wireless network) authentication using USB tokens.
- PKI enabled infrastructures (Novell, Entrust, Computer Associates, Entrust, etc.)

The major features of Cryptoidentity are:

- Easy of use for the clients: just connect it into the USB port to access digital certificates or protected data.
- Easily integrated with commons applications via PKCS#11 (for example Netscape, Mozilla) and MS CSP (for example Internet Explorer, Outlook Express).

Cryptoidentity User Guide – 1. Introduction to Cryptoidentity and CryptoKit

- Easily integrated with the applications compatible with PKCS#11 and MS CAPI (Cryptoidentity SDK includes libraries and examples).
- Strong cryptographic capabilities:
 - ATMEL AT903232C - 6464C Cryptographic processors
 - RSA key generation on token up to 2048 bit.
 - Encrypt/decrypt operations with RSA keys up to 2048 bit.
 - Digital signature and verification.
 - Hardware random number generator.
 - 32KB - 64KB EEPROM memory

(2048 bit RSA and 64KB EEPROM are available only to the 2048 model).

I. I. 2 CRYPTOIDENTITY MODELS

Cryptoidentity is available in different models, depending on the size of the RSA keys supported and internal memory.



In this guide the term "Cryptoidentity" is used to indicate a generic Cryptoidentity model. A specific model is specified when operations or steps described in this guide require a specific version of the tokens.

The Cryptoidentity models are:

Cryptoidentity (also known as **Cryptoidentity4**)

The first USB cryptographic model manufactured by Eutron Infosecurity, this model is now in the process of being placed out of production. By the way, drivers and middleware in the CryptoKit package ensure support for it.

Cryptoidentity5

The successor of Cryptoidentity4, this model provides the following features:

- RSA keys up to 1024 bit.
- EEPROM memory 32KB.
- Fast data transfers between the token and the host machine (up to 64 Kbps).
- New waterproof casing
- Bi-color led.
- Full PC/SC driver. Cryptoidentity5 drivers support the full PC/SC standard in Win98, ME, NT4, W2K, and XP. PC/SC lite support (www.linuxnet.com) is available for Linux.
- Microsoft digital signature on driver. The latest Cryptoidentity driver has been digitally signed and certified by Microsoft for the use in W2K, XP and 2003.

Cryptoidentity 2048

In addition to all the features of Cryptoidentity5, this model supports:

- RSA keys up to 2048 bit
- EEPROM memory 64KB



*Additional **Cryptoidentity** models (**ITSEC I-P-FIPS**), are also available. Please note that this guide and CryptoKit applies **ONLY** to the Cryptoidentity4, Cryptoidentity 5 & 2048 models. For details about the ITSEC models, please visit www.cryptoidentity.eutron.com.*

1.1.3 CRYPTOIDENTITY DEFAULT PINs

Each Cryptoidentity is protected by a **PIN** and a **Security Officer PIN**.

The Cryptoidentity **PIN** is automatically required every time a private key or a private object stored into the Cryptoidentity is going to be accessed. For example, the PIN is required to sign or decrypt a message using a private key stored into the token.



The applications accessing the Cryptoidentity private area must specify in the source code the Cryptoidentity PIN value when running PKCS#11 or CAPI functions, otherwise the end-users are asked to enter the PIN when running the application.

A window appears every time the Cryptoidentity PIN is required:



The PIN is required also during private key generation (for example during a digital certificate enroll).

The **Security Officer PIN** is mainly used to allow the Cryptoidentity USB token initialization. Before starting the initialization process (refer to section “3.3 *InitToken*”) the Security Officer PIN is required.



Do NOT forget the Security Officer PIN, because this prevents to initialize the Cryptoidentity token.



*For security reasons, if a wrong Cryptoidentity PIN is inserted consequently for **12** times, the Cryptoidentity PIN is **LOCKED**.*

*If a wrong Security Officer PIN is inserted consequently for **6** times, the Security Officer PIN is **LOCKED** and **NO MORE USABLE**.*



It is possible to customize the counter of wrong attempts before the PIN and Security Officer PIN are locked. To do so, refer to section "1.1.4 Cryptoidentity default configuration."

If you need Cryptoidentity tokens which already have this customization according to your needs, please contact Eutron Infosecurity Sales Department at info@eutron.com

Each Cryptoidentity has already been initialized during the manufacturing process. The manufacturing initialization process set into the Cryptoidentity USB token a standard PIN and Security Officer PIN.

Therefore there is no need to initialize a Cryptoidentity before starting to use it.

The default PIN set during manufacturing process is : "**12345678**".

The default Security Officer PIN set during manufacturing process is "**11111111**" (8 times "1").



For security reasons, it is strongly suggested to change the default PIN before using the Cryptoidentity token. Please refer to section "3.2 Password Change Utility" to change the PIN. If you wish to change the Security Officer PIN, please refer to section "3.3 InitToken".

You can change the Cryptoidentity PIN and Security Officer PIN also through the AR Genie utility. For details refer to section "3.1 AR Genie".



If you need Cryptoidentity tokens with different default PINs, please contact Eutron Infosecurity Sales Department at info@eutron.com and require this customization.

I. I. 4 CRYPTOIDENTITY DEFAULT CONFIGURATION

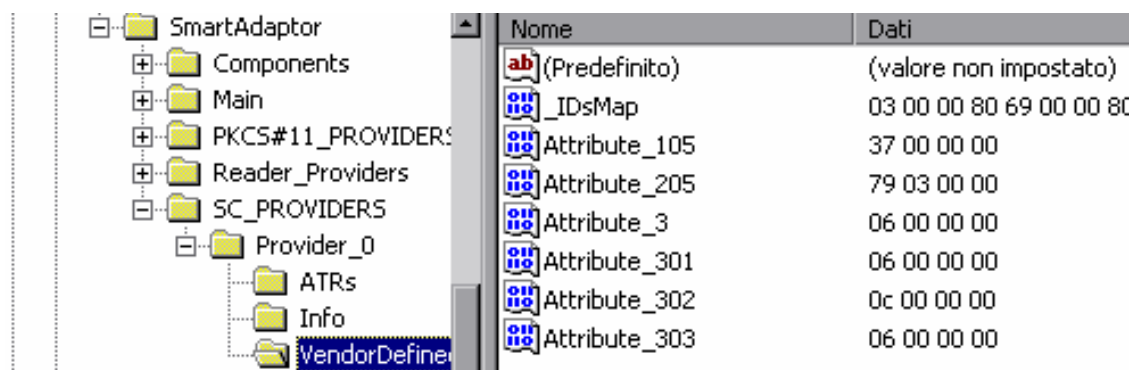
Since normal operations with Cryptoidentity require preliminary configuration (PIN expiration period, min PIN length, max PIN length, number of PIN and SO PIN attempts, max number of RSA private keys), these parameters are supplied as default value during the Cryptoidentity Initialization process.

The initialization process sets into Cryptoidentity the parameters read from the following Windows registry key:

**HKEY_LOCAL_MACHINE\Software\ARL\SmartAdaptor\SC_PROVIDERS\Provider_01
VendorDefined**

Cryptoidentity User Guide – 1. Introduction to Cryptoidentity and CryptoKit

The parameters ("Attribute_(XX)") stored in this key are set into the Cryptoidentity by the initialization process:



In details:

Parameter	Explanation	Name registry value	Default value
Max PIN length	Maximum PIN size (alphanumeric characters)	Attribute_105	37 (Hex) - 55 (dec)
PIN expiration	Number of days before the PIN expires	Attribute_205	379 (hex) - 889 (dec)
Min PIN length	Minimum PIN size (alphanumeric characters)	Attribute_3	6 (Hex) - 6 (dec)
Max RSA private keys	Maximum number of RSA private keys into the token	Attribute_301	6 (Hex) - 6 (dec)
PIN attempts	Number of sequential wrong attempts before the PIN locks	Attribute_302	0c (Hex) - 12 (dec)
SO PIN attempts	Number of sequential wrong attempts before the Security Officer PIN locks	Attribute_303	6 (Hex) - 6 (dec)

It is possible to customize all these Cryptoidentity parameters. The customization must be done before the Cryptoidentity initialization. To do so:

- Edit the previous registry values according to your needs. For example, to change the Cryptoidentity "Max PIN length" parameter, edit the "Attribute_105" registry value and set the desired length.
- Reboot the machine.
- After the reboot, initialize the Cryptoidentity through **Init Token** or **AR Genie** utility. For details about the initialization process, refer to section "3.3 Init Token" or "3.1 AR Genie".
- The initialization process will configure the Cryptoidentity according to the desired configuration. Regarding the previous example, a new "Max PIN length" parameter will be set into the token.



In next chapters, this guide will provide examples and instructions related to Cryptoidentity default configuration.

1.1.5 CRYPTOIDENTITY REQUIREMENTS

These are the Cryptoidentity requirements:

- CryptoKit properly installed (refer to sections “1.2.1 CryptoKit requirements” and “2.1.1 Installing CryptoKit ”)
- A free USB port
- USB protocol enabled in the BIOS settings
- USB **1.1** or **2.0**

1.2 WHAT IS CRYPTOKIT

CryptoKit provides the basic software to work with the Cryptoidentity token. It installs the Cryptoidentity USB token drivers, some useful utilities, the SDK package and the middleware to allow software applications such as Internet browsers, e-mail clients and other developed applications to take advantage of the Cryptoidentity cryptographic functionalities.

For further details about the CryptoKit installation, refer to section “2.1.1 Installing CryptoKit”.

1.2.1 CRYPTOKIT REQUIREMENTS

CryptoKit supports these Operating Systems:

- Microsoft Windows 98 SE
- Microsoft Windows ME
- Microsoft Windows NT 4.0 (SP6 or higher). Note: Windows NT 4.0 machines embedding an OHCI controller (see www.usb.org) are not supported.
- Microsoft Windows 2000 Server\Professional (SP4 or higher)
- Microsoft Windows XP (SP1 or higher)
- Microsoft Windows 2003 Standard\Enterprise



Windows NT 4.0, 2000, 2003 and XP requires administrative privileges during setup process.

- Linux. Please enquire our sales department at info@eutron.com for information about the Linux port.



Some Microsoft Outlook and Internet Explorer versions outside the USA only support low-level cryptography (40 bit symmetric encryption). These versions will not allow CryptoKit to use 128 bit Cryptography. In order to fully utilise the cryptographic power of CryptoKit please make sure to install the security updates for Outlook/IE, which are available at Microsoft's web site.

2. GETTING STARTED WITH CRYPTOIDENTITY

This chapter explains how to install CryptoKit and the CryptoIdentity drivers.

2.1 INSTALLING AND MAINTAINING CRYPTOKIT

Before using the CryptoIdentity token for any purpose, it is **mandatory** to install CryptoKit. Next section will guide you through the process.

Refer to section "1.2 What is CryptoKit" for details about CryptoKit.

2.1.1 INSTALLING CRYPTOKIT

Before installing CryptoKit, check the system to verify if it matches the minimum system requirements. Refer to section "1.2.1 CryptoKit requirements" for details.



It is possible to force CryptoKit setup to install automatically only the desired components by editing the file "Ck_setup.ini" located in the setup folder. For further details, send an email to Eutron Infosecurity at helpdesk@eutron.com



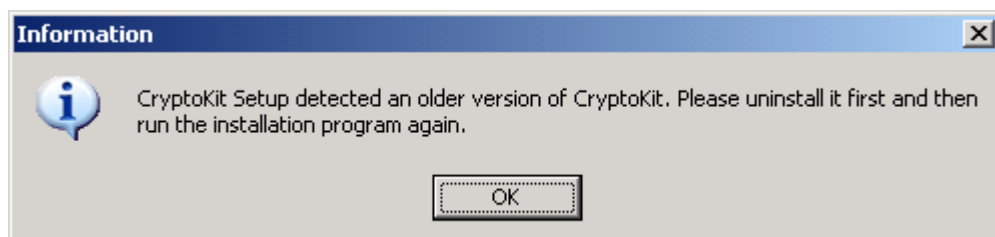
*CryptoKit setup is also available in .msi format. It allows, for example, to install CryptoKit through **Active Directory deployment**. For further details, send an email to Eutron Infosecurity at helpdesk@eutron.com*

Before proceeding to install CryptoKit please read carefully these notes:



*To install properly the software, **do not plug** the CryptoIdentity USB token into the USB port before installing CryptoKit.*

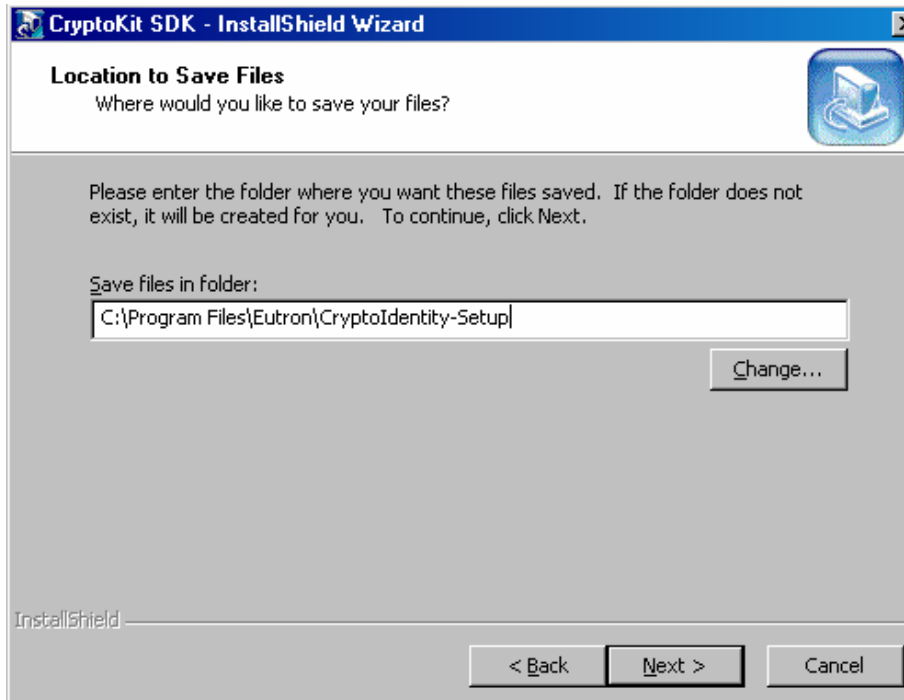
*If an older CryptoKit version was previously installed it is **mandatory** to uninstall it. Remove it by **Add-Remove programs** from the Windows control panel. A message box appears during the CryptoKit installation if an older CryptoKit release has been detected on the system:*



Cryptoidentity User Guide – 2. Getting Started with Cryptoidentity

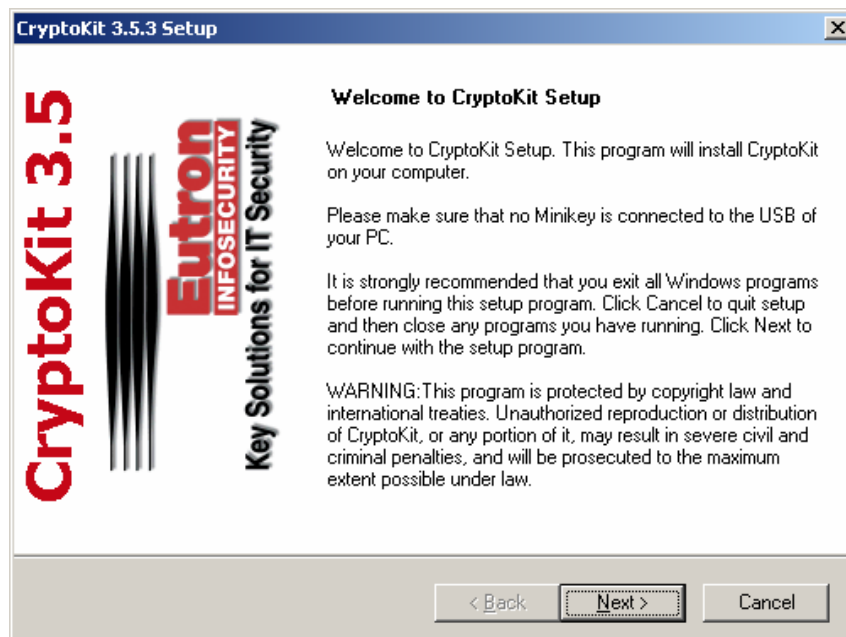
To install the CryptoKit (standard installation):

- Insert the original CryptoKit CD-ROM.
- Run **Cryptoidentity-setup.exe** from the root directory on the Installation CD.
- The installation process needs to extract into a folder the files used by the setup. Choose a folder (recommended is "C:\<Program Files>\Eutron\Cryptoidentity-Setup")

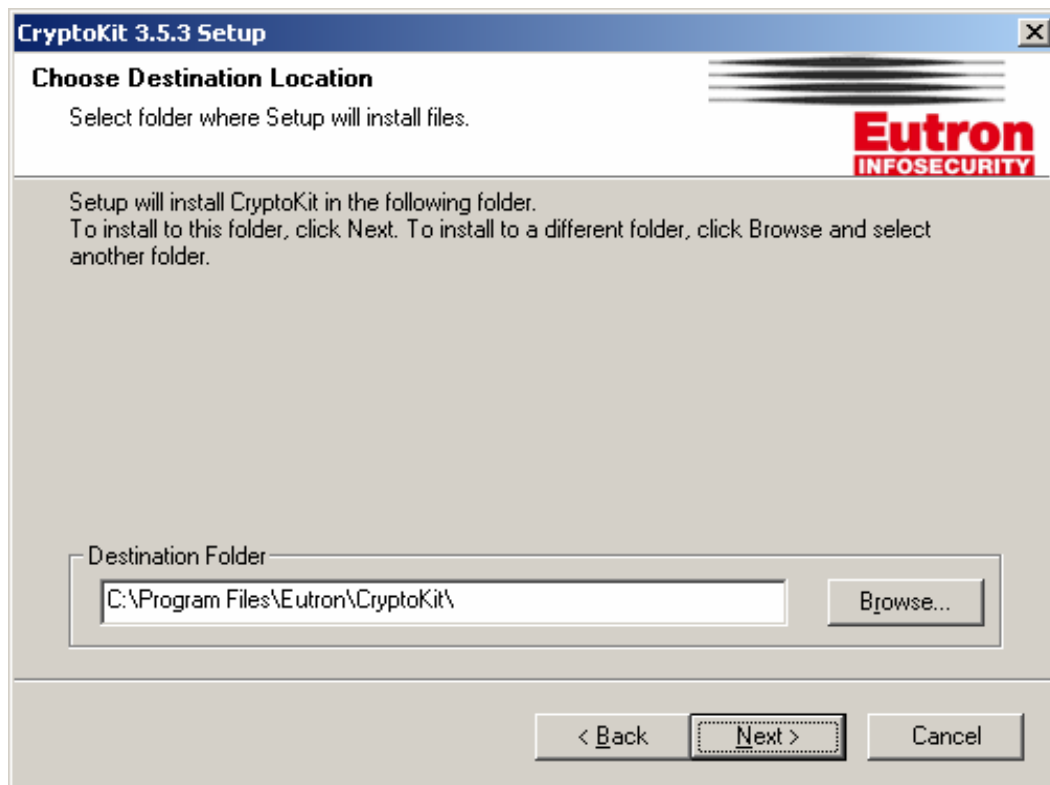


The process automatically adds on the hard-disk the folder specified. If the same folder was already created during a previous installation, the setup process asks to overwrite it. From this folder it is possible to run CryptoKit setup for future installations or maintenance without using the original CD.

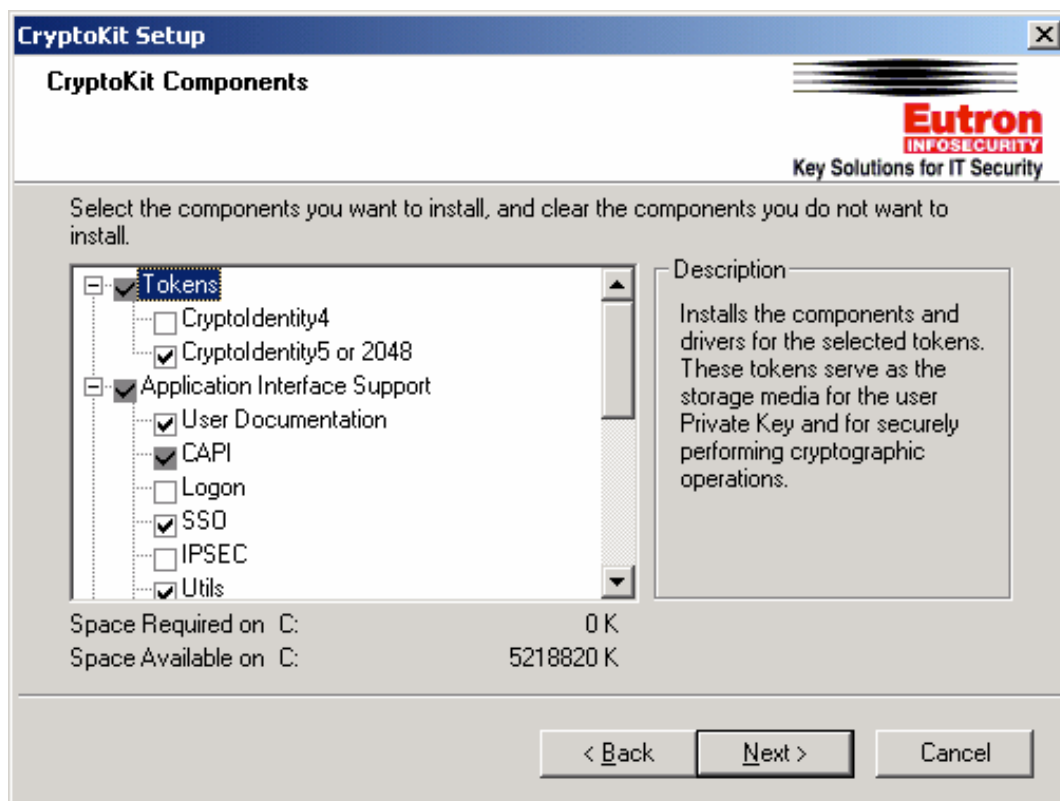
- Then, the setup starts automatically:



- Choose a Destination Folder. The default location is C:\Program Files\Eutron\CryptoKit.



- Next, select the CryptoKit Components to install:



Cryptoidentity User Guide – 2. Getting Started with Cryptoidentity

Here is a brief description about the available components:

Tokens

It installs the Cryptoidentity drivers.

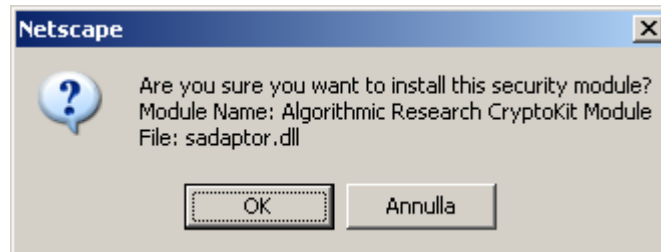
- **Cryptoidentity4** : installs the Cryptoidentity4 driver (**optional**, select it only if is used the Cryptoidentity4 model)
- **Cryptoidentity5 or 2048**: installs the Cryptoidentity USB token driver (**mandatory**, select it if the Cryptoidentity5 or 2048 model are used).

Application Interface Support

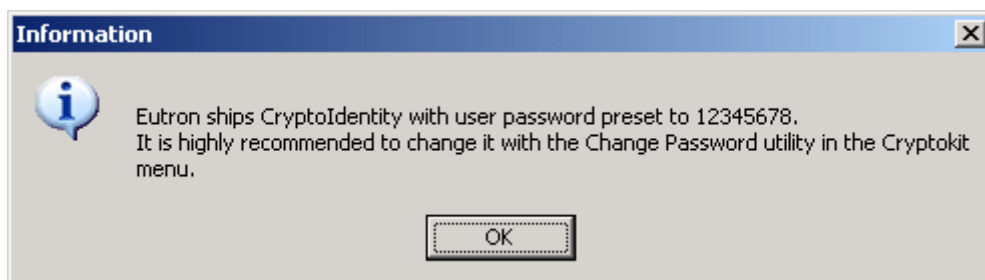
It installs the additional software required to use the Cryptoidentity USB token with applications.

- **User Documentation**: adds into the "< CRYPTOKIT INSTALL DIR >\doc" folder this guide ("Cryptoidentity User Guide v2.1.pdf"), the guide related to Microsoft smartcard logon infrastructure and Cryptoidentity (file " CryptoidentityLogon.pdf") and the guide related to Microsoft VPN and Cryptoidentity (file "CK_VPN_PPTP.pdf") - (we **strongly** suggest to select it)
- **CAPI**: enables CAPI applications, for example Microsoft Outlook or Internet Explorer, to use CryptoKit as their cryptographic engine - (you **must** select it).
- **Logon**: adds the smartcard logon feature into the local system in order to allow Microsoft smartcard logon process to authenticate through Cryptoidentity - (**optional**, available only on Microsoft Win 2000/XP/2003 machines).
- **SSO**: enables Single Sign On feature. SSO feature caches securely the Cryptoidentity PIN value to prevent several PIN requests by applications - (**optional**).
- **IPSEC**: enables Win 2000 IPSEC filters using Cryptoidentity - (**optional**).
- **Utils**: installs the following Cryptoidentity utilities - (**we suggest to select it**)
 - **ARGenie**: to make several operations on the token (refer to section "3.2.1 ARGenie")
 - **Password Change Utility** : to change the Cryptoidentity PIN (refer to section "3.2.2 Password Change Utility").
 - **InitToken**: to initialize the Cryptoidentity token or change the Security Officer PIN (refer to section "3.3 Init Token").
 - **ImportPKCS12** : to import into the Cryptoidentity token certificates stored in a .pfx or .p12 files (refer to section "3.2.4 ImportPKCS12").
 - **Token Serial Number**: to obtain the Cryptoidentity serial number (refer to section "3.2.5 Serial Number").

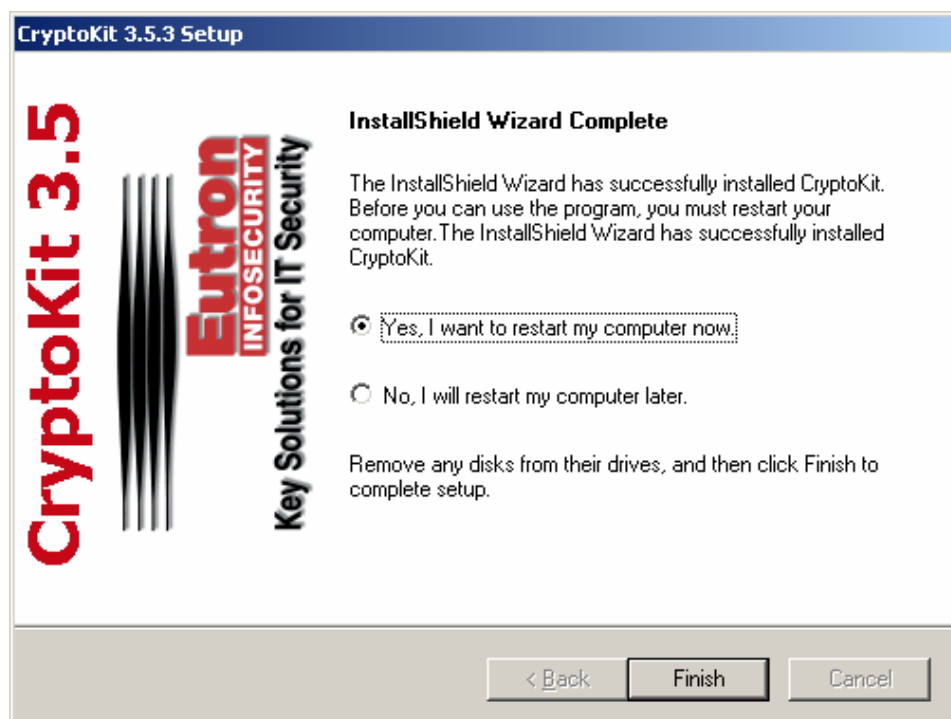
- **Netscape:** enables Netscape to use CryptoKit as cryptographic engine by adding the CryptoKit security module (**optional**, select it only if Netscape is used).
- Select the desired components and click **Next**.
- If the Netscape option is selected, the Netscape browser opens automatically to display the following window (from Netscape 4.79):



- Press **OK** to add the CryptoKit security module and close the browser to proceed.
- The following screenshot appears to remind the Cryptoidentity default PIN (refer to section "1.1.3 Cryptoidentity default PINs") :



- At the end of the installation a **reboot/restart may be required**. If required, click **Finish** and reboot the system.



Cryptoidentity User Guide – 2. Getting Started with Cryptoidentity

- After the restart (if required), the CryptoKit installation **must be completed** by plugging a Cryptoidentity into an USB port. If the installation process did not ask to reboot the system, the Cryptoidentity must be plugged into an USB port at the end of the CryptoKit setup.



*The first time a Cryptoidentity is plugged after the CryptoKit setup, the Cryptoidentity driver installation procedure **will start and complete automatically**.*

- It is now possible to access the CryptoKit shortcuts, from **Start->Programs->Eutron CryptoKit**.

2.1.2 MAINTAINING AND REPAIRING CRYPTOKIT

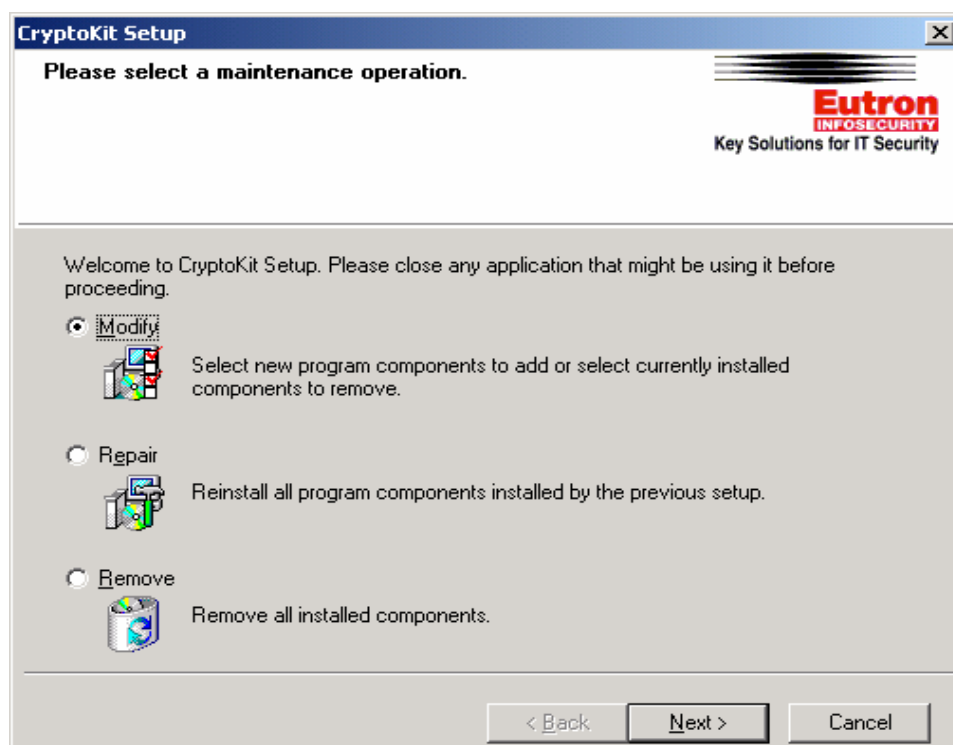
It is possible to maintain the components installed by a previous CryptoKit installation. For example, it is possible to remove or add a component (drivers, utilities, libraries, etc.).



Windows NT, 2000, 2003 and XP require administrative privileges to maintain or repair CryptoKit.

To maintain CryptoKit:

- Remove Cryptoidentity from the USB port.
- Run the uninstallation procedure (**Start-> Programs-> Eutron CryptoKit-> Add Remove CryptoKit Components**) or use the **Add-Remove programs->CryptoKit** in the Windows control panel.
- When requested, select the **"Modify"** option:



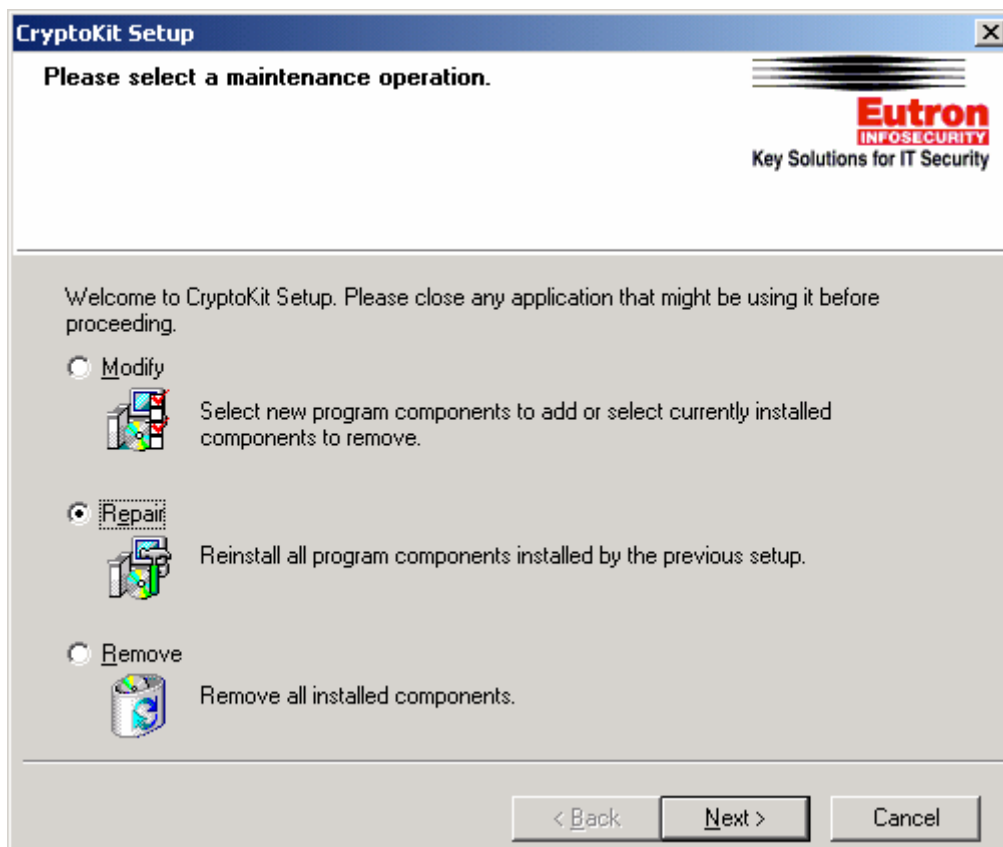
CryptoIdentity User Guide – 2. Getting Started with CryptoIdentity

- Click **Next**, select or de-select components to install/uninstall, and complete the process.
- At the end of the process **a reboot/restart may be required**. If required, reboot the system.

It is also possible to repair a CryptoKit installation, if troubles are encountered during the usage of the installed components.

To repair a previous CryptoKit installation:

- Remove the CryptoIdentity token from the USB port.
- Run the uninstallation procedure (**Start-> Programs-> Eutron CryptoKit-> Add Remove CryptoKit Components**) or use the **Add-Remove programs->CryptoKit** in the Windows control panel.
- When requested, select the **"Repair"** option:



- The "Repair" process re-installs all currently installed components to repair them.
- At the end of the process **a reboot/restart may be required**. If required, reboot the system.

2.1.3 UNINSTALLING CRYPTOKIT

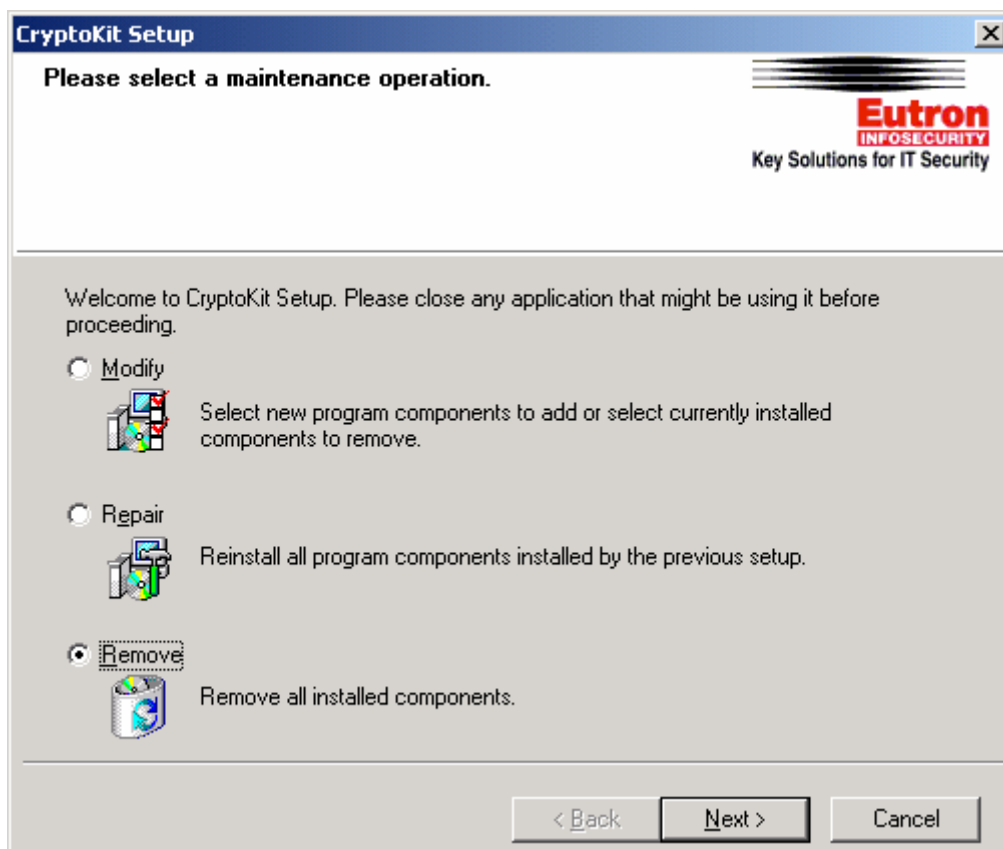
If you wish to uninstall CryptoKit:

- Remove the Cryptoidentity token from the USB port.
- Run the uninstallation procedure (**Start-> Programs-> Eutron CryptoKit-> Add Remove CryptoKit Components**) or use the **Add-Remove programs->CryptoKit** in the Windows control panel.



Windows NT, 2000, 2003 and XP require administrative privileges to uninstall CryptoKit.

- When requested, select the "**Remove**" option:



- At the end of the uninstallation procedure, close all running applications and reboot the PC.



Do NOT uninstall CryptoKit if you still have installed applications such as Microsoft Smartcard logon or others which take advantage of the Cryptoidentity functionalities. This might cause these applications to stop working properly.

3 WORKING WITH CRYPTOIDENTITY UTILITIES

CryptoKit provides some utilities to work with the Cryptoidentity token. The next sections explain in details their usage.

3.1 ARGENIE

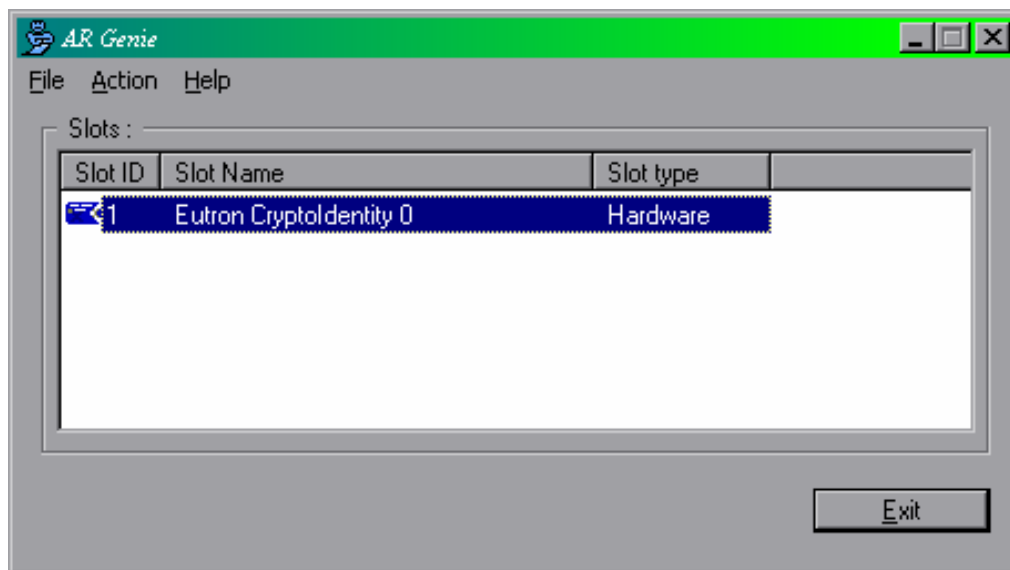
CryptoKit provides this utility to perform several operations with Cryptoidentity.

It is possible to run the AR Genie utility in **standard** or **advanced** mode.

Standard mode:

- Run the program **AR Genie** from Windows Start Menu (**Start-> Programs-> Eutron CryptoKit**).

The following is the AR Genie main window:



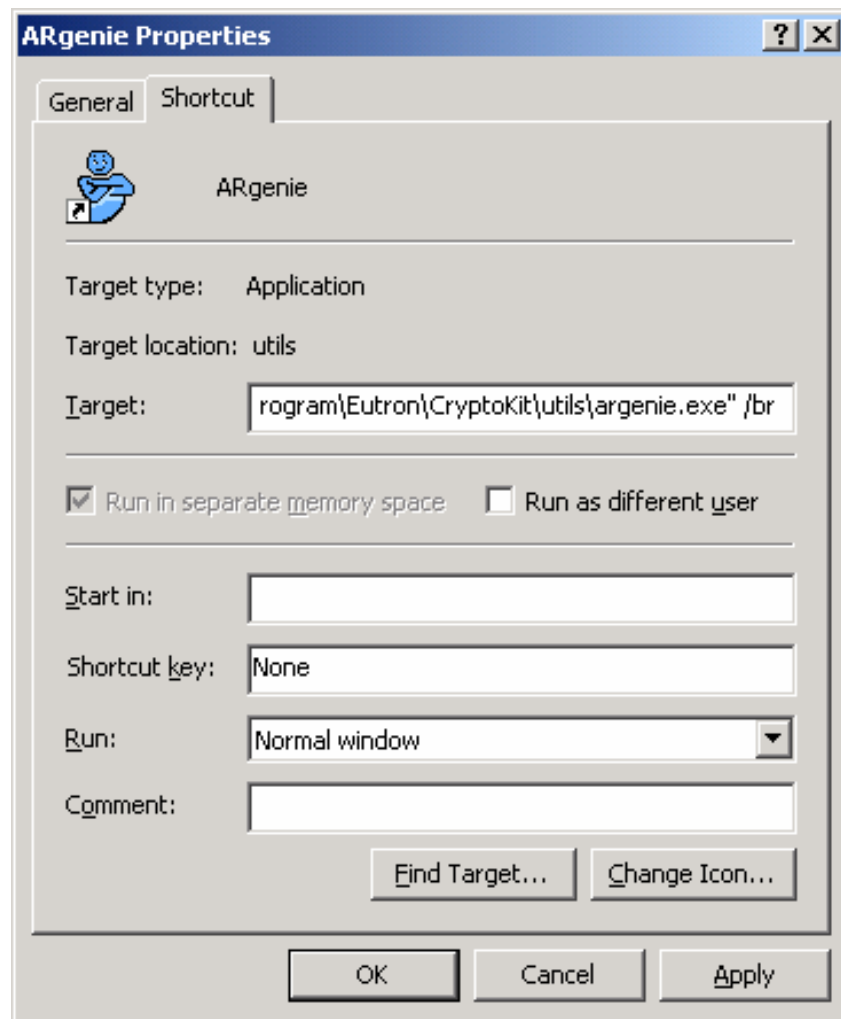
- Make sure a Cryptoidentity USB token is plugged into an USB port and from the "**Action**" menu, select the operation you want to apply to the token.
- Each AR Genie feature is explained in the AR Genie help. To open the AR Genie Help, select the menu **Help->Contents**. Refer to the AR Genie help for all the information about the AR Genie utility.

Advanced mode:

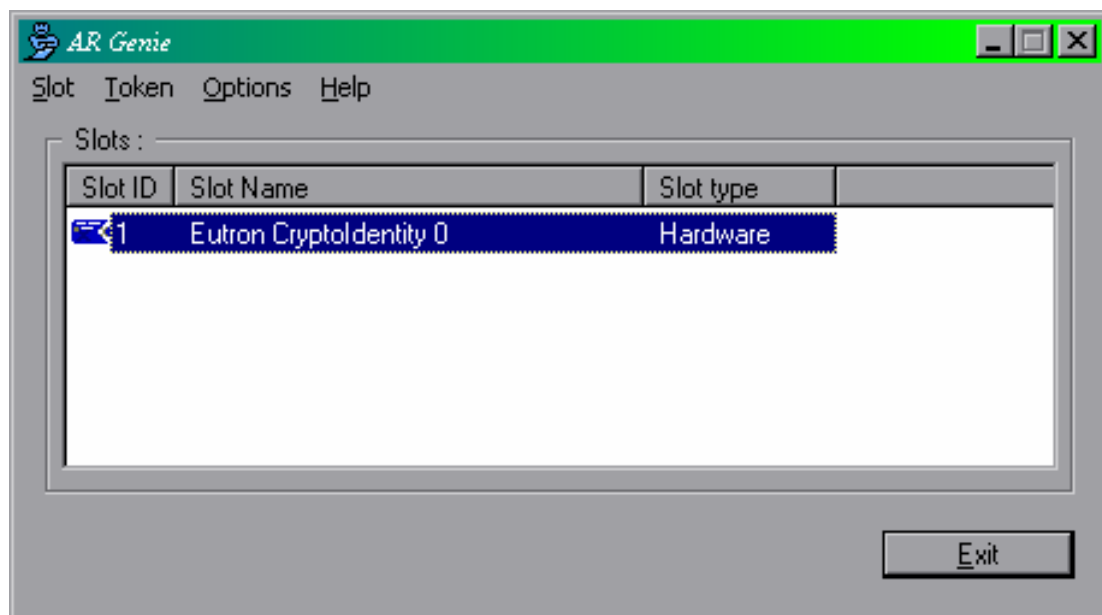
- Create a shortcut to the AR Genie utility (right click->**Create shortcut** on the AR Genie icon located in **Start-> Programs-> Eutron CryptoKit**).

Cryptoidentity User Guide – 3. Working with Cryptoidentity Utilities

- In the AR Genie shortcut properties, add to the "**Target**" field the "/br" parameter. The complete Target must be the following:



- Run the AR Genie utility from the new shortcut:



The AR Genie utility in advanced mode provides these additional features:

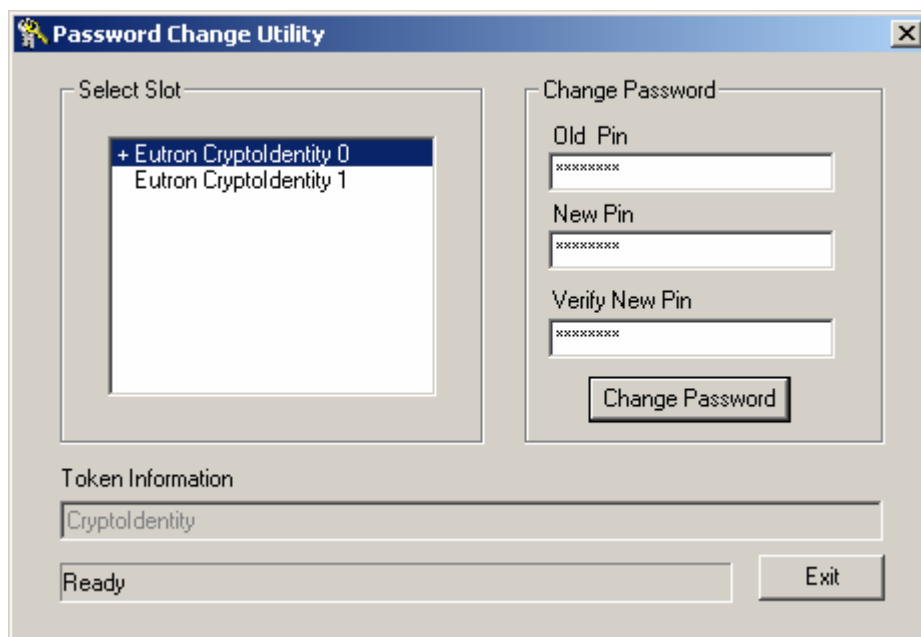
- **Slot menu**
 - *Get Information*: provides general information about the Cryptoidentity token plugged.
 - *Refresh List*: refresh the "slots" list.
 - **Token menu**
 - *View objects*: allows to view the public objects stored into the Cryptoidentity USB token. Logging in to the token (by inserting the Cryptoidentity PIN from the **Token->Login** menu) it is also possible to view the private objects stored into Cryptoidentity.
 - **Options menu**
 - *Logs*: enables the automatic generation of the logging files.
 - *Programs*: allows to insert the Cryptoidentity label during initialization process and to enforce PIN request before viewing the objects stored into the token.
 - *Advanced*: provides several information and options about Cryptoidentity and related Reader.
- Each other AR Genie feature is explained in the AR Genie help. To open the AR Genie Help, select the menu **Help->Contents**. Please refer to the AR Genie help for further information about the AR Genie utility.

3. 2 PASSWORD CHANGE UTILITY

CryptoKit provides this utility to change the PIN of your Cryptoidentity.

- To use it, run the program **Password Change Utility** from Windows Start Menu (**Start-> Programs-> Eutron CryptoKit**).

The following is the Password Change Utility main window:





When a Cryptoidentity USB token is plugged, the symbol “+” appears near the slot description.

To change the PIN of the Cryptoidentity USB token:

- Select the slot where the token is plugged.
- Insert the current PIN in the **Old Pin** field.



If this is the first time that the Cryptoidentity PIN is about to be changed, insert as **Old Pin** the PIN “12345678” according to section “1.1.3 Cryptoidentity default PINs”.

- Insert the new value to assign in the **New Pin** field and confirm it in the **Verify New Pin** field.
- Press **Change Password**.

If the **Old Pin** is correct and the **Verify New Value** is the same of **New Pin**, the change is carried on and a confirmation panel appears.



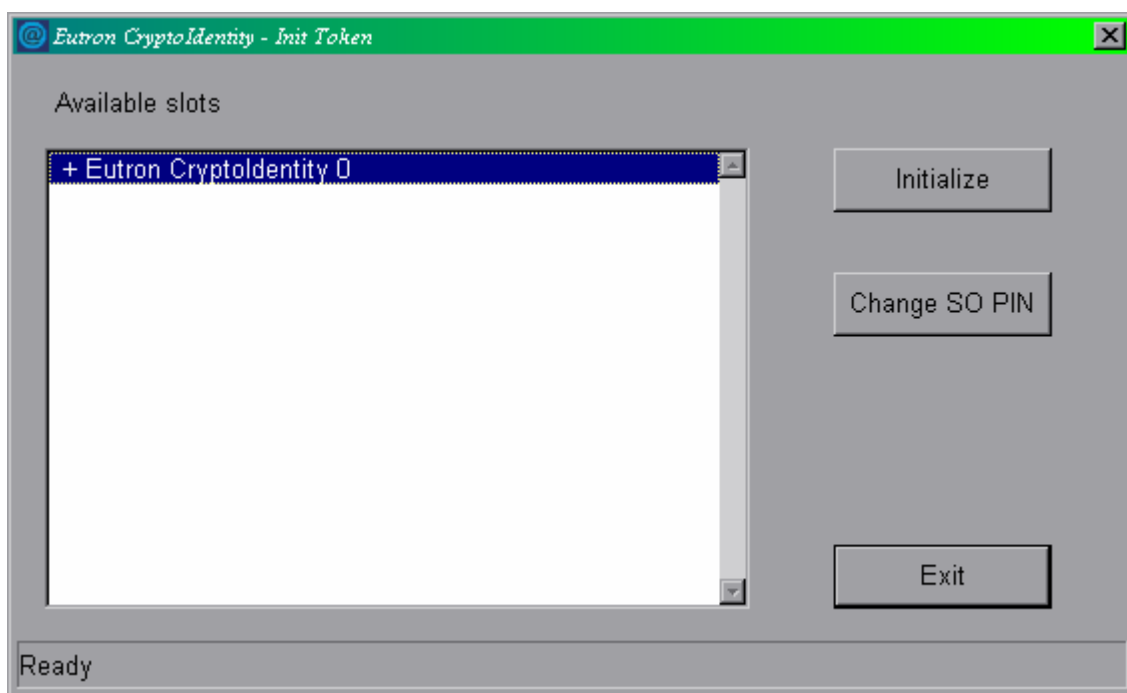
For security reasons, if a wrong Cryptoidentity PIN is inserted consequently for **12** times, the Cryptoidentity PIN is **LOCKED**.

3. 3 INIT TOKEN

This utility allows to initialize the Cryptoidentity token or change its Security Officer PIN.

- Run **Init Token** from Windows menu (**Start-> Programs-> Eutron CryptoKit**).

The following is the InitToken main window:



Cryptoidentity User Guide – 3. Working with Cryptoidentity Utilities

- Choose whether initialize the Cryptoidentity (**Initialize** button) or change the Security Officer PIN (**Change SO PIN** button)

To **initialize** the Cryptoidentity token:

- To start the **initialization** procedure, choose the USB port where the Cryptoidentity token to be initialized is inserted.



When a Cryptoidentity token is plugged, the symbol “+” appears near the slot description.

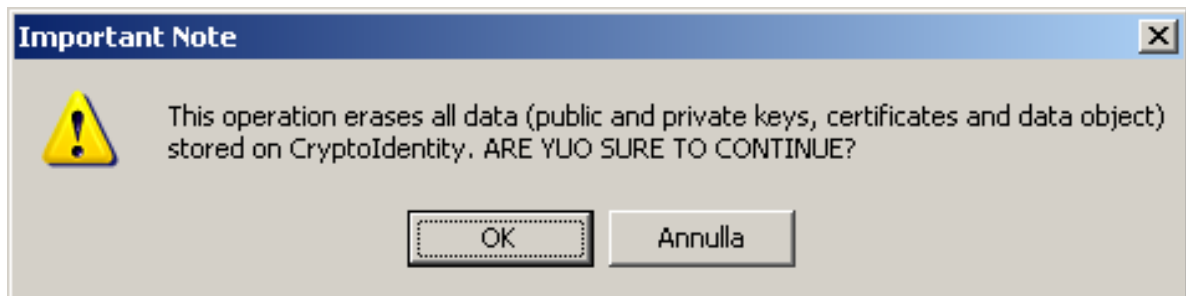
- Press the button **Initialize**.



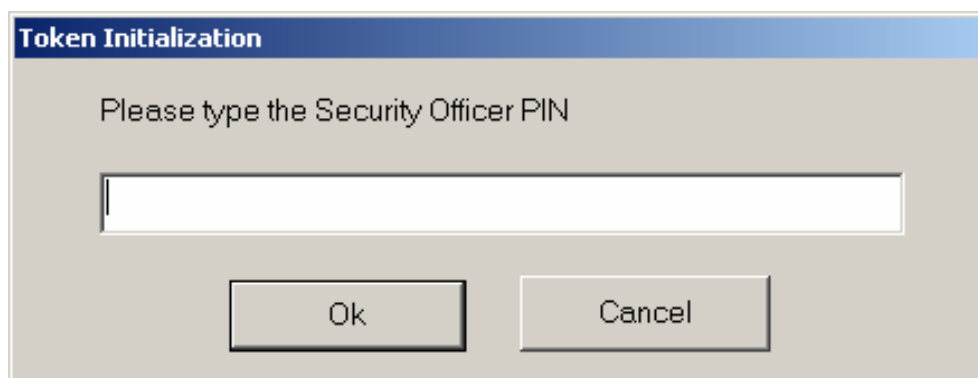
The initialization process erases all data, cryptographic keys and certificates stored into the Cryptoidentity USB token. If data were encrypted using a key stored into the Cryptoidentity USB token, it will NOT be possible to decrypt that data anymore.

To backup credentials and cryptographic keys refer to chapter "4.3 Suggested policy for backup of digital credentials".

- A message box pops up to remind the “destructive” nature of this operation; press **OK** only if token re-initialization is needed:



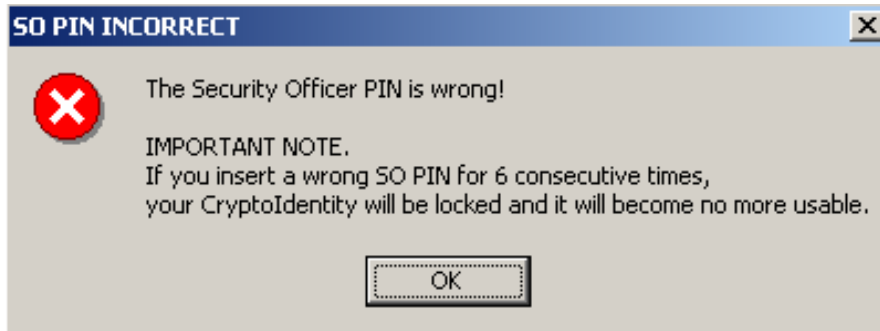
- The Security Officer PIN is required:



To perform the token initialization **the Security Officer PIN is required.**

If this is the first time that the Cryptoidentity USB token is about to be initialized and the Security Officer PIN was not changed previously, insert as **Security Officer PIN** the value "**11111111**" (refer to section "1.1.3 Cryptoidentity default PINs").

- A message box appears if a wrong Security Officer PIN is inserted:



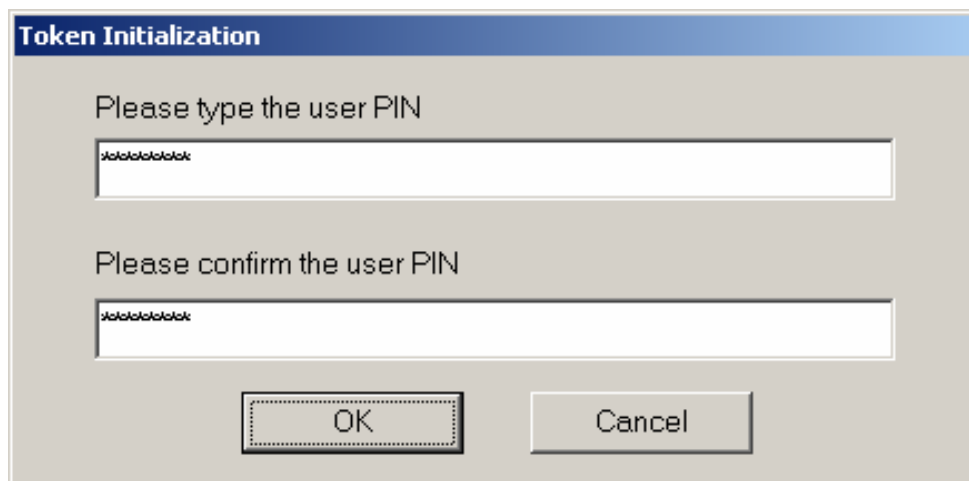
For security reasons, If a wrong Security Officer PIN is inserted consequently for **6** times, the Security Officer PIN is **LOCKED** and **NO MORE USABLE**.

- The last step is to set the new user PIN.

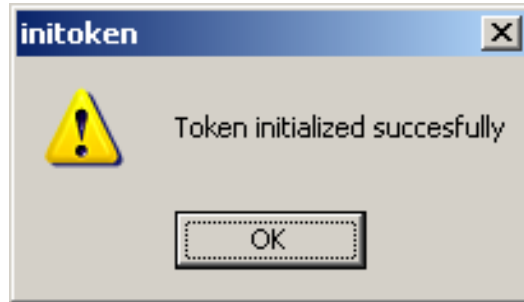
Before inserting the user PIN be aware that:



- it should be at least 6 characters long;
- Maximum size is 54 characters
- it may be alphanumeric;
- It is case-insensitive.



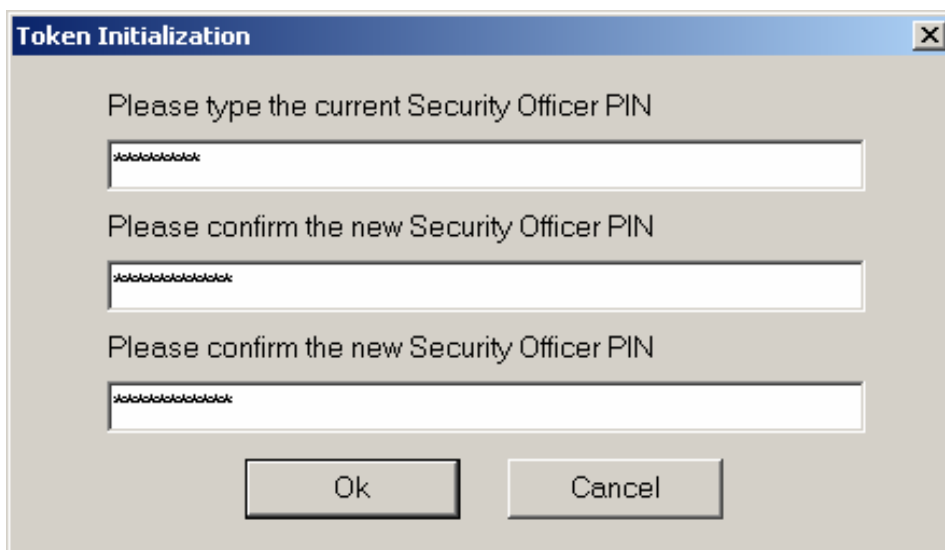
- Wait while the initialization process runs; at the end a window pops up:



The initialization process sets into Cryptoidentity the default configuration. To customize the Cryptoidentity configuration, refer to section "1.1.4 Cryptoidentity default configuration "

To **change the Cryptoidentity Security Officer PIN**:

- Choose the USB port where the Cryptoidentity is plugged, and press **Change SO PIN** button:



- In the first edit box enter the current Security Officer PIN, in the second and third one enter the new value to assign (it must be confirmed in the third edit text field) and press **OK**. If no error occurs, the Security Officer PIN is changed successfully.



*If this is the first time that the Security Officer PIN is about to be changed, insert as **current Security Officer PIN** the value "11111111" (refer to section "1.1.3 Cryptoidentity default PINs").*

- A message confirms that the Security Officer PIN has been successfully changed:



*For security reasons, If a wrong Security Officer PIN is inserted consequently for **6** times, the Security Officer PIN is **LOCKED** and **NO MORE USABLE**.*

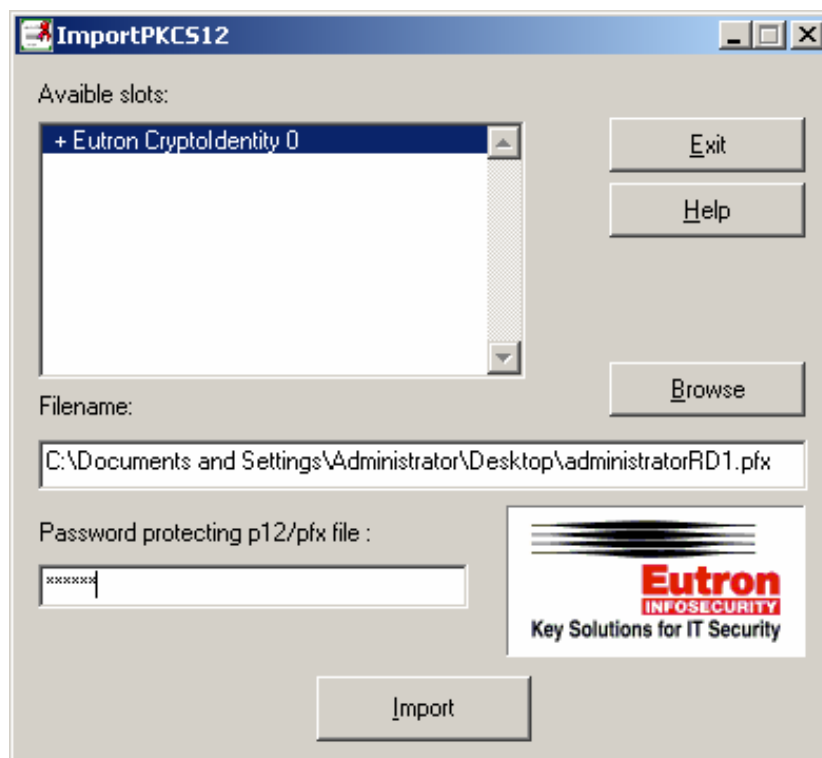
3. 4 IMPORTPKCS12

CryptoKit provides the ImportPKCS12 utility.

ImportPKCS12 can import a certificate stored in a PKCS#12 standard file (*.p12 or *.pfx) into the Cryptoidentity USB token.

- Run **ImportPKCS12** utility from Windows menu (**Start-> Programs-> Eutron CryptoKit**.)

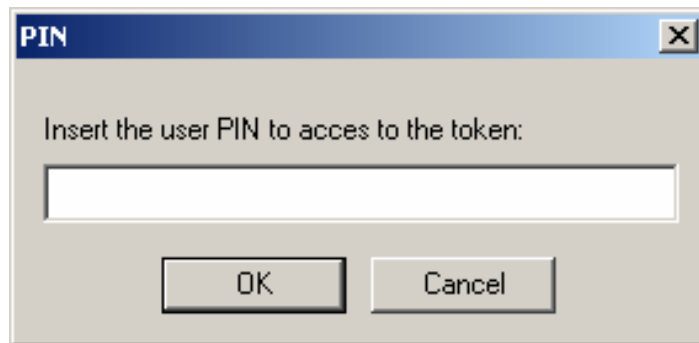
The following is the ImportPKCS12 main window:





When a Cryptoidentity is plugged, the symbol “+” appears near the slot description.

- Select the slot where the token is plugged.
- Click **Browse** and select a valid .pfx or .p12 file
- Insert the password protecting the .pfx or .p12 file selected
- Press **Import** and insert the token PIN:

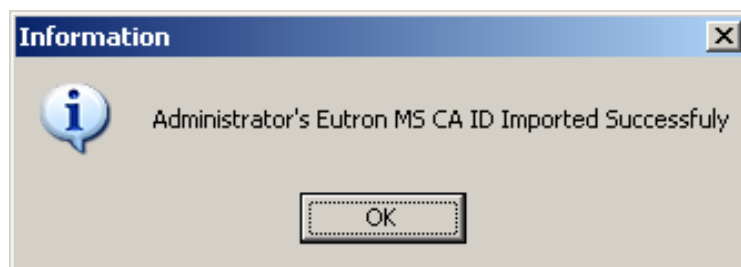


- If the PIN and the other parameters specified are correct, the .p12/.pfx certificate and associated keys are imported into the Cryptoidentity USB token (otherwise an error is returned).



*For security reasons, if a wrong Cryptoidentity PIN is inserted consequently for **6** times, the Cryptoidentity PIN is **LOCKED**.*

- When the process is completed, a dialog box appears:



- Cryptoidentity now stores securely the imported certificate and cryptographic keys; cryptographic operations requiring access to the private key will be executed on board.



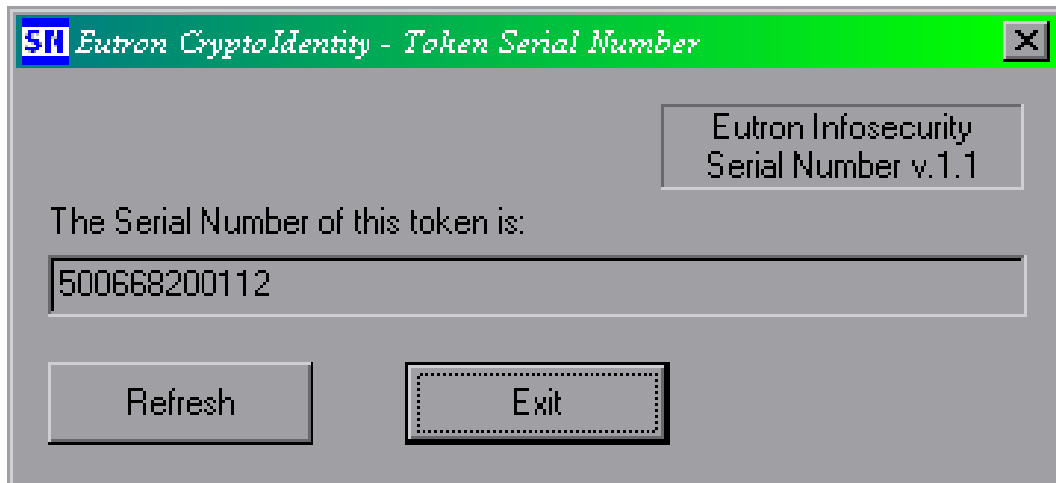
*When a certificate is imported into Cryptoidentity with ImportPKCS12, the private key that is created is **NOT** exportable.*

3. 5 TOKEN SERIAL NUMBER

This utility shows the Cryptoidentity serial number.

- To use it, run the program **Token Serial Number** from Windows Start Menu (**Start-> Programs-> Eutron CryptoKit**).

The following is the Token Serial Number main window, including the serial number of a Cryptoidentity:



4. MANAGING DIGITAL CERTIFICATES WITH CRYPTOIDENTITY

This chapter explains how to manage Digital Certificates with the Cryptoidentity token.

4.1 STORING CERTIFICATES INTO CRYPTOIDENTITY

There are different ways to store a digital certificate into a Cryptoidentity USB token; the following is a non-exhaustive list:

- through Certification Authority such as **Microsoft CA** (refer to the Microsoft smartcard logon and Cryptoidentity guide - file "CryptoidentityLogon.pdf"), **Verisign** (refer to section "4.1.2.1 Verisign"), **Thawte** (refer to section "4.1.3.1 Thawte"), etc.
- through ImportPKCS12 utility (refer to section "2.2.5 ImportPKCS12" and "4.1.3 Certificates imported from file")

4.1.1 CERTIFICATES ISSUED BY CAs

In order to send secure e-mail (signed and encrypted), to authenticate to a VPN or a LAN, or for any other purpose where digital credentials are essential, a digital certificate (or certified digital ID) is needed.

Verisign and Thawte are two companies that provide the service of issuing digital certificates through Internet. The following two sections detail the procedures to follow in order to obtain a free certificate. It is also possible to buy a 1-year certificate.



The Verisign and Thawte procedures for issuing certificates might change in the future. The steps described in the next sections, however, should help during these procedures.

4.1.1.1 VERISIGN

To obtain a Digital Certificate from Verisign CA and store it into a Cryptoidentity token, follow carefully these instructions.

- Plug the Cryptoidentity into an USB port, go to the Verisign web site (**www.verisign.com**) and select the procedure to generate a digital ID for personal e-mail.

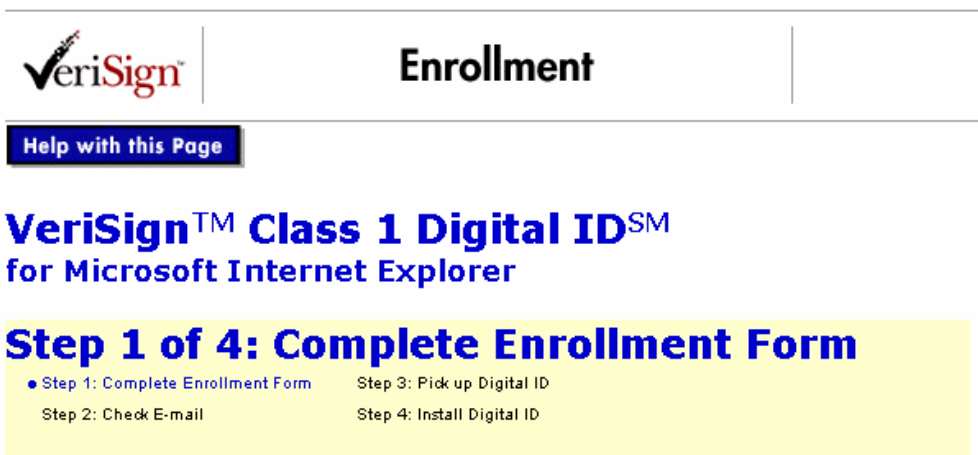
To reach the Verisign Enrollment Page **directly** :

(if Internet Explorer is used) <https://digitalid.verisign.com/client/class1MS.htm>

(if Netscape is used) <https://digitalid.verisign.com/client/class1Netscape.htm>

If you reached the Enrollment Page from a previous link, **jump to "Complete enrollment form" sub-step.**

- Click on the **Products and Services** top menu, then select **Digital ID for secure email** from the **Products and services by name** area under **Security products & services** menu (at the bottom of the page).
- In the next page select "Free digital ID Trial" to get a trial certificate. It is also possible to buy a certificate. This offers some additional feature.
- Scroll down the page and click on **Enroll Now**. This should be the Enrollment Page:



VeriSign™ Class 1 Digital ID™
for Microsoft Internet Explorer

Step 1 of 4: Complete Enrollment Form

- Step 1: Complete Enrollment Form
- Step 2: Check E-mail
- Step 3: Pick up Digital ID
- Step 4: Install Digital ID

- There are four sub-steps to go through:

▪ **Complete enrollment form** (start from here if the page has been reached from a previous link)

-Scroll down the page and fill-in the form with Name, Last Name and the email address.

First Name: Nickname or middle initial allowed (example -- Jack B.)	
Last Name: (example -- Doe)	
Your E-mail Address: (example -- jbdoe@verisign.com)	

Challenge Phrase

This unique phrase protects you against unauthorized action on your Digital ID and should not be shared with anyone. Do not lose it! It is required to revoke, replace, renew or set preferences for your Digital ID.

Enter Challenge Phrase:
Do not use any punctuation.

-Make sure to select 60 day Trial Class Digital ID:

Choose a Full-service Class 1 Digital ID, or a 60-day Trial Class 1 Digital ID

I'd like a one-year, full-service Digital ID for only US\$14.95 per year.



I'd like to test drive a 60-day trial Digital ID for free.

Does not include revocation, replacement, renewal or coverage under the NetSure Protection Plan.



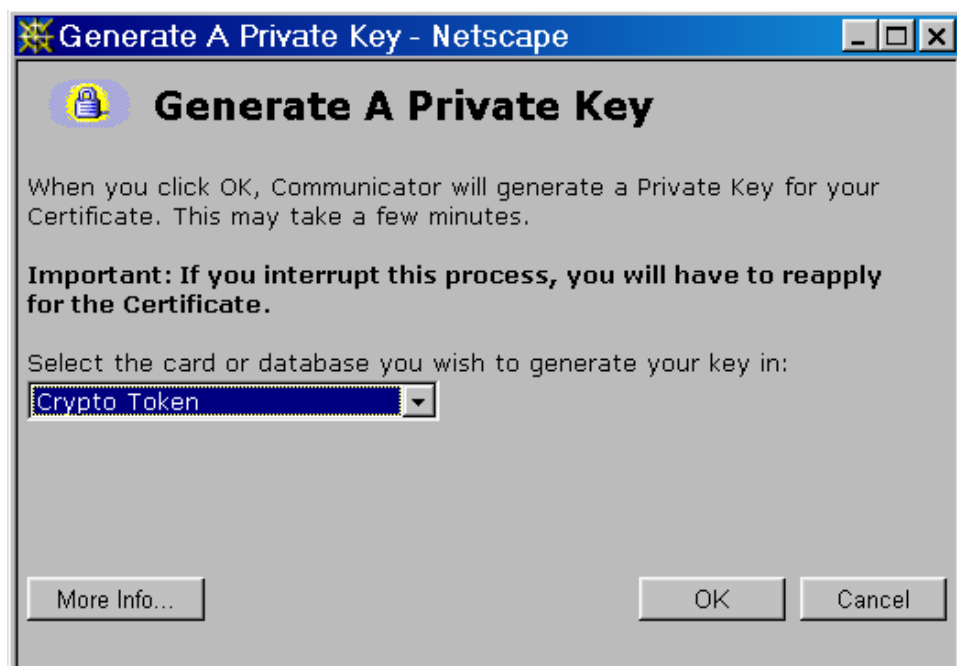
-Then follow the instructions regarding the browser used:

-For Netscape: confirm the security strength is 1024 and submit the form.

Encryption Strength:

1024 (High Grade)

-At this stage Netscape asks where to generate the private key. Select the Cryptoidentity token, click **OK**, and then insert the Cryptoidentity PIN.



-For MS Internet Explorer: choose **AR Base Cryptographic Provider** as Cryptographic Service Provider name:

(Optional): Select The Cryptographic Service

If you have a domestic version of this browser you are offered an Enhanced Cryptographic option which provides 1024-bit key encryption. The MS Base Cryptographic provider offers 512-bit key encryption which is adequate for most applications today, but you may select the Enhanced option if your browser offers this choice and you require the higher encryption strength. If you use a specialized mechanism such as a smartcard, please select the appropriate provider as directed by the manufacturer.

Cryptographic Service Provider Name

AR Base Cryptographic Provider

- **Check e-mail**

-An email is sent few minutes after the enrollment form has been filled out and submitted/ accepted; this e-mail contains the instruction for the next steps and a unique Personal Identifier Number, copy that number on the clipboard.

- **Pick up the Digital ID**

-Go to the URL address included in the email, paste in the proper field the Personal Identifier Number described in step 2, and click **submit**.

Enter the Digital ID Personal Identification Number (PIN): The Digital ID PIN is listed in the confirmation e-mail that was sent from the Digital ID Center.	
Submit	

- **Install your Digital ID**

-Click the Install button, and the digital ID is installed (it means that your certificate is loaded into the Cryptoidentity token).

Your Digital ID Your Digital IDSM has been successfully generated.
Organization = VeriSign, Inc. Organizational Unit = VeriSign Trust Network Organizational Unit = www.verisign.com/repository/RPA Incorp. by Ref.,LIAB.LTD(c)98 Organizational Unit = Persona Not Validated Organizational Unit = Digital ID Class 1 - Microsoft Common Name = eutron01@eutron.com Email Address = eutron01@eutron.com

- Now manage the digital certificate for the desired purposes. See section "4.2 Viewing Certificates" to view the certificate details.



*it is **mandatory** to complete the whole process using the same machine and the same browser*

4. I. I. 2 THAWTE

To obtain a Digital Certificate from the Thawte CA and store it into Cryptoidentity, follow these instructions carefully.

- Plug a Cryptoidentity token into an USB port and then go to Thawte web site (www.thawte.com).
- Select "**Products**" and click "**Personal Email Certificates**" from the loaded page.
- Click "**Join**".
- There are four sub-steps to go through:

▪ Enrollment

- Terms and condition of Personal Certification**: read them and select **Next** at the bottom of the page to continue.
- Personal Cert System Enrollment**: fill out the form and select **Next**.
- Core Identification information**: fill out the form (make sure to not miss-type the e-mail address) and select **Next**.
- Personal Preferences**: set the personal preferences and select **Next**.
- Personal Certification Password**: read carefully this page and select the password. Click **Next**.
- Set Password Questions And Contact Telephone Number**: fill out the form and select **Next**.
- Please Confirm Enrollment Information**: select **Next** if the profile is correct.

▪ Respond to the e-mail Ping

- Check the e-mail**: an email is sent few minutes after the Enrollment. This e-mail explains the instructions for the next steps and two numbers (Ping and Probe).
- Follow the link** included in the e-mail.
- Enter the Probe and the Ping** and select **Next**.
- Thawte Username Successfully Created**: now click **Next** or go to www.thawte.com/cgi/personal/contents.exe

▪ Pick up your Digital ID

- Enter username and password.
- Select the software and click to request the **X.509 Format Certificates**.
- Select **Next** and specify the browser used.
- Click **Next**.
- Select the e-mail and click on **Next**.
- Select **Next**.
- Select **Accept Default Extension**.

- Choose "**AR Base Cryptographic Provider**" as **CSP**. This is very important, otherwise the certificate is not stored into the Cryptoidentity token. **Make sure the Cryptoidentity USB token is plugged in.** Select **Next**.
- Type the Cryptoidentity PIN in the window that pops up. Wait while the Cryptoidentity USB token generates the unique private key.
- At the end of the process, select **Certificate Manager**.

▪ **Install the Digital ID**

- Click the certificate from the **Valid Certificate List**.
- Check the certificate summary and select **Fetch And Install Certificate**.
- Make sure the Cryptoidentity USB token is plugged in**, click on **Install your cert**. The certificate will be stored securely into the Cryptoidentity token.

- Now manage the certificate for the desired purposes. See section "**4.2 Viewing Certificates**" to see the certificate details through the operating system certificates list.

Additional notes:



*It is **mandatory** to complete the whole process using the same machine and the same browser. The previous steps refer to enrollment with Microsoft Internet Explorer.*

4. I. 2 CERTIFICATES IMPORTED FROM FILE

It is possible to import into the Cryptoidentity token digital certificates saved in a standard pkcs#12 format (files with .p12 or .pfx extension). The file to be imported **must contain the private key** associated to the digital certificate included.

The **PKCS#12** is the standard which describes the transfer syntax for personal identity information, including private keys and certificates.

To import the digital certificates into the Cryptoidentity token you can use, for example, Netscape or PKCS12Import utility.

Next sections explain how to do so with Netscape and PKCS12Import utility.



It is possible to generate a digital certificate and related keys outside the token, for example in a file, save it in .p12 or .pfx format (including the private key) and then import it into the Cryptoidentity token

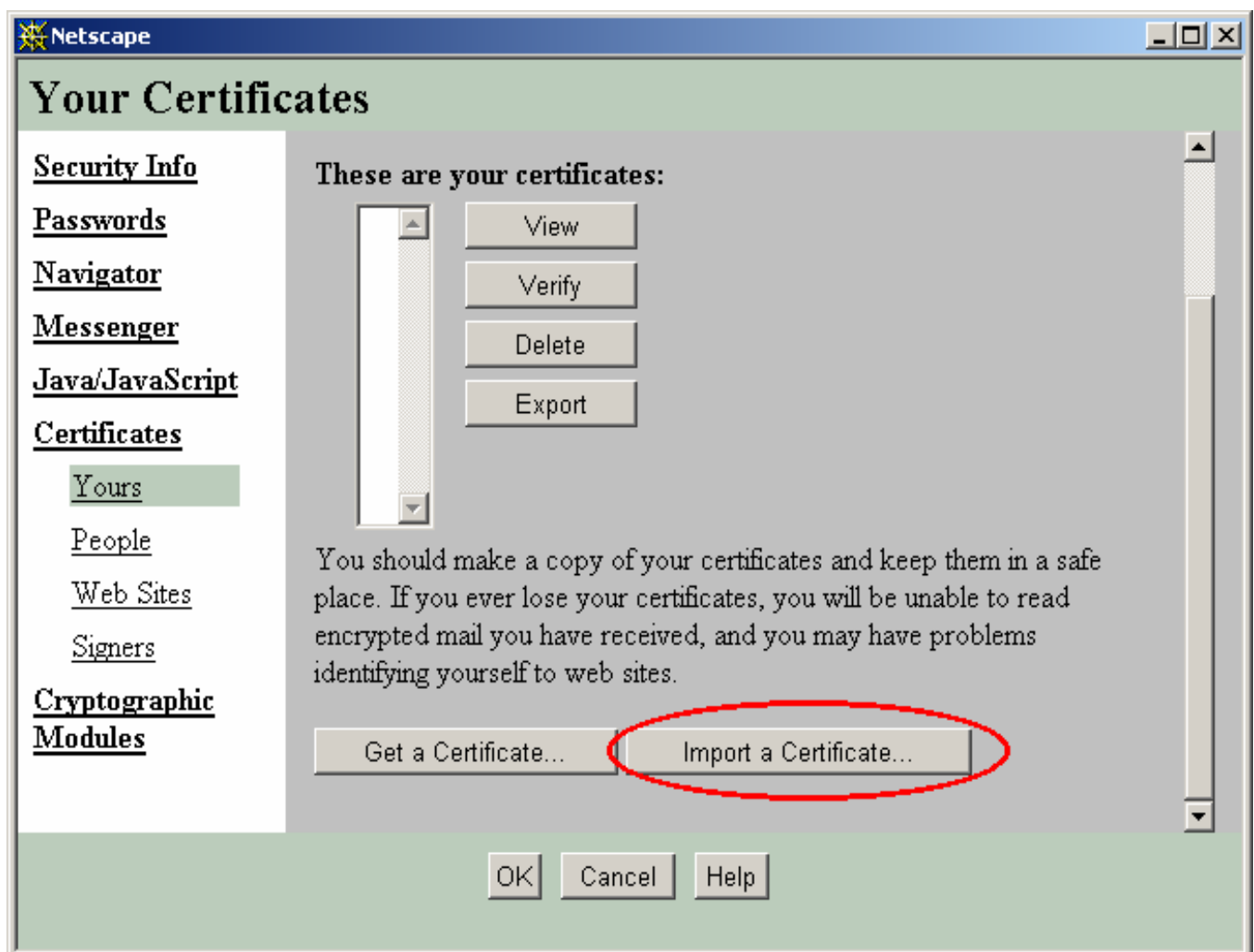
*This procedure is suggested to keep a **backup** of the digital credentials. For further details refer to sections "**4.3 Suggested policy for backup of digital credentials**" and "**4.3.1 How to backup digital credentials**".*

4. 1. 2. 1 IMPORTING THROUGH NETSCAPE

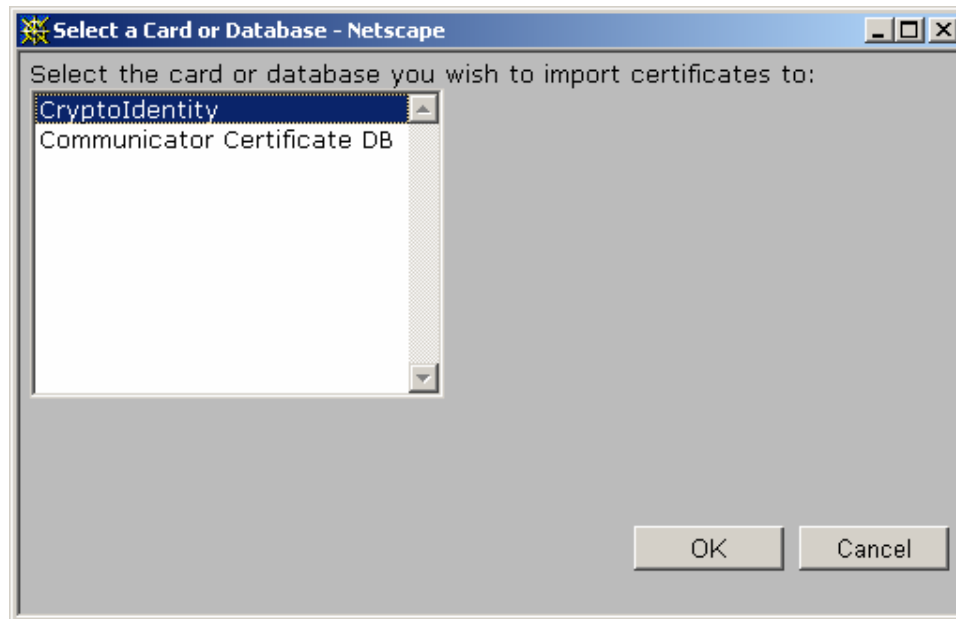
Using Netscape 4.x is possible to import certificates saved in PKCS#12 format into the Cryptoidentity token.

Proceed with the following steps:

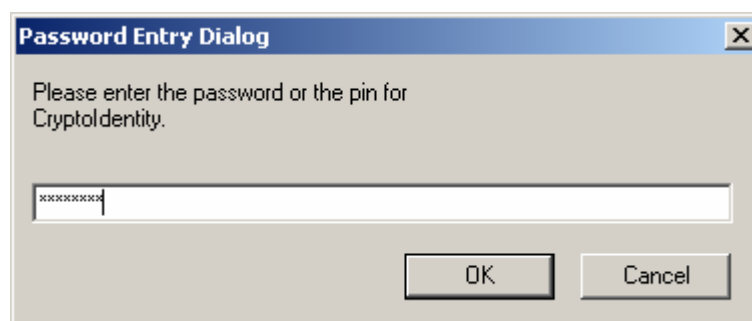
- Plug Cryptoidentity into an USB port.
- Launch **Netscape Navigator**.
- Click on the **Security** button on the Navigation Toolbar (or from the menu bar select **Communicator-> Tools-> Security Info**).
- Go to **Yours** under **Certificates** and press **Import a Certificate** button:



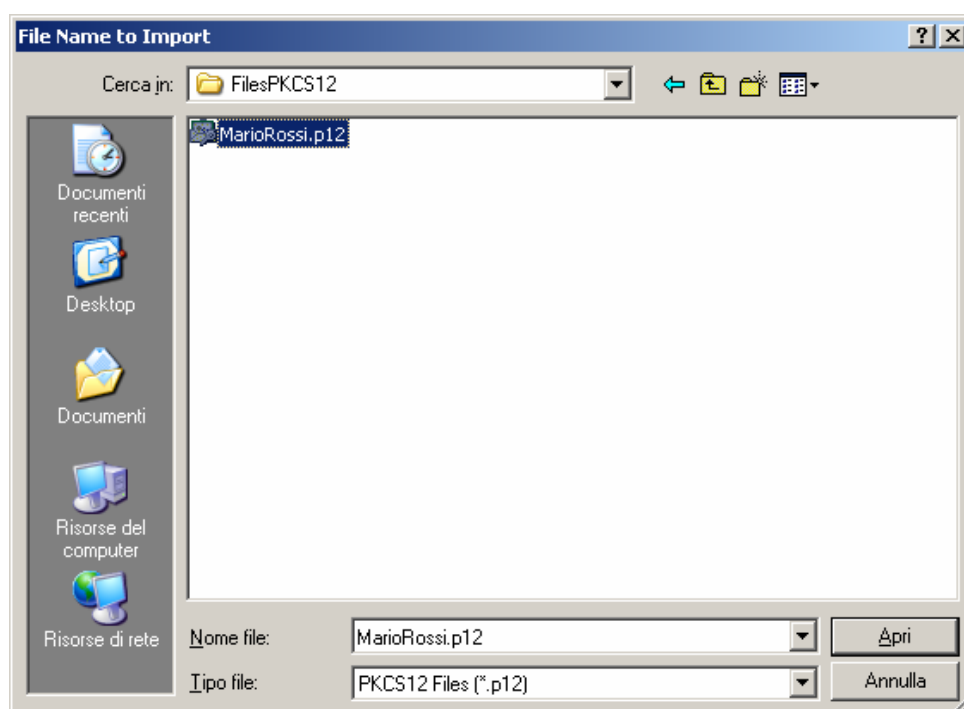
Select the Cryptoidentity token. Press **OK**.



- Insert the Cryptoidentity PIN and press **OK**.

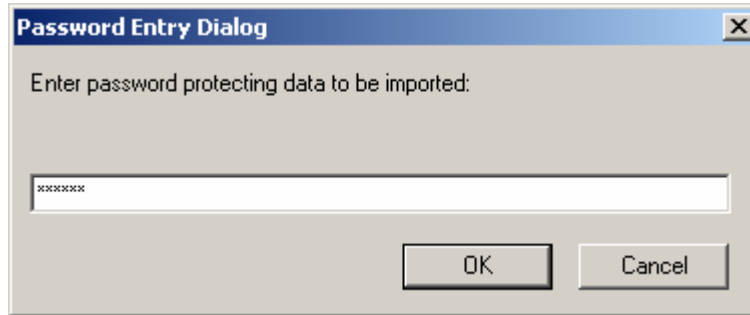


- Select the file where the .p12 or .p12 file certificate is stored. To view the .pfx file list change Files of type: to All Files (*.*)



Cryptoidentity User Guide – 4. Managing Digital Certificates with Cryptoidentity

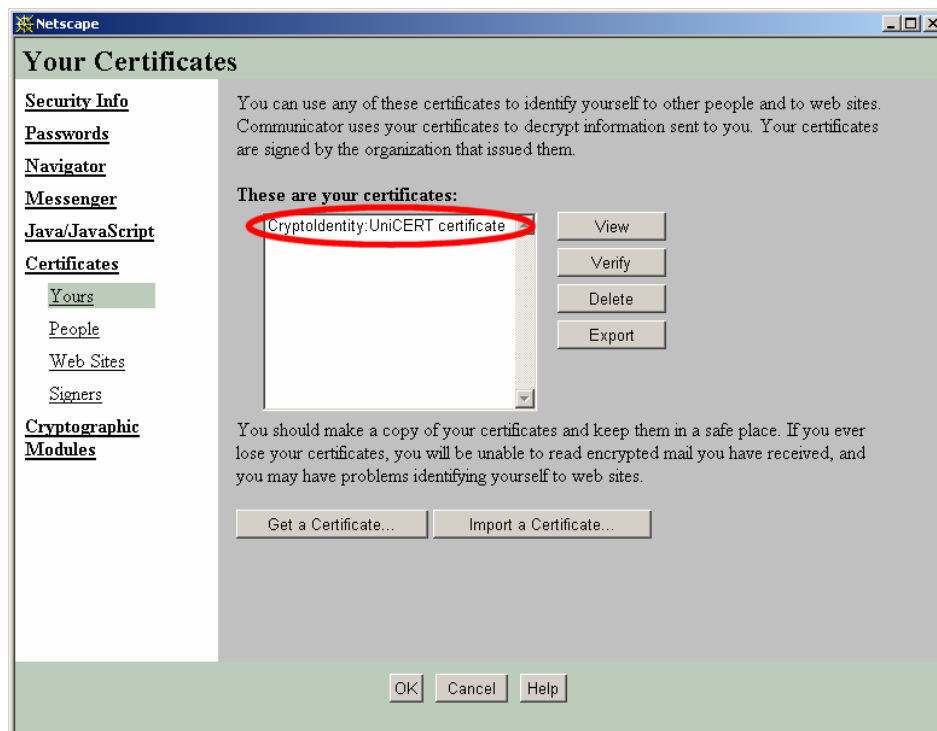
- Press **Open**. A mask like this should pop up. Insert the password protecting the file:



- A confirm message pops up.



- To see the certificate choose **Yours** under **Certificates** in **Security Info** screen.



- Now manage the imported certificate stored into Cryptoidentity for the desired purposes with Netscape.



To use the imported certificate also with Microsoft applications such as Outlook Express or Internet Explorer, the token must be "standardized" through the AR Genie utility. For details about AR Genie utility and the standardize process, please refer to section 3.1 AR Genie and to AR Genie Help.

4. 1. 2. 2 IMPORTING THROUGH IMPORTPKCS12

To import a certificate from a .p12 or .pfx file, please refer to section "3.4 ImportPKCS12".

4. 2 VIEWING DIGITAL CERTIFICATES

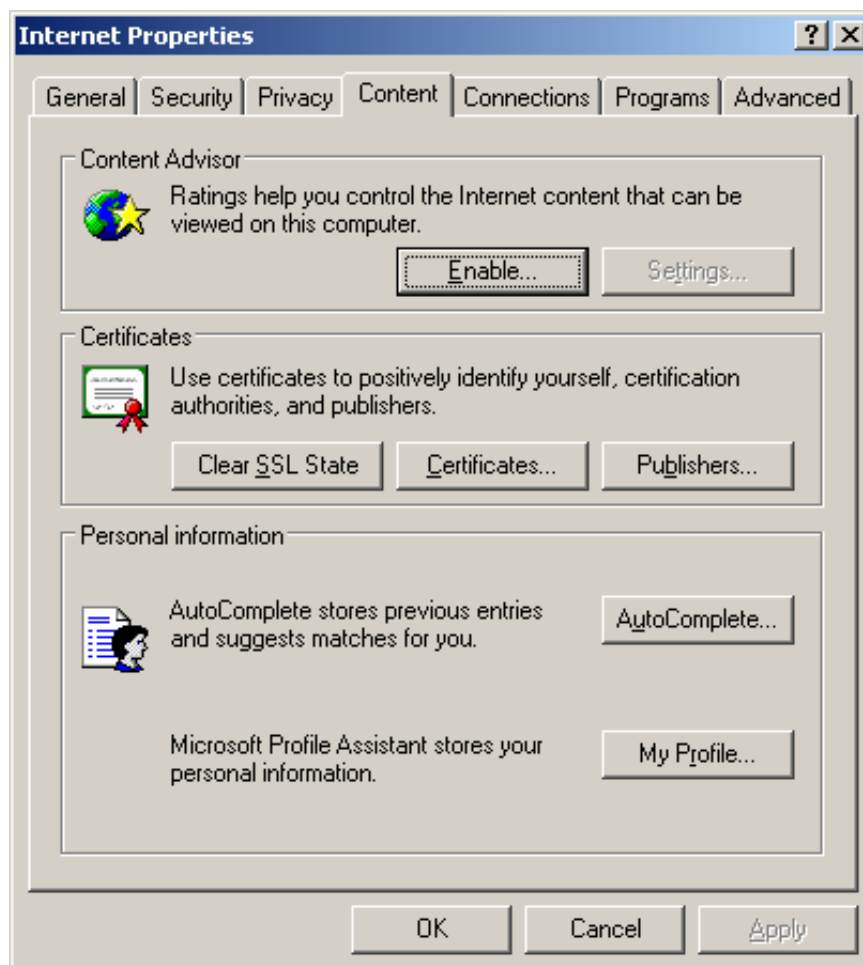
Once there is a certificate stored into the Cryptoidentity token, it is possible to view it through the Microsoft System Certificates Store or the AR Genie utility.

Next sections explain the detailed instructions.

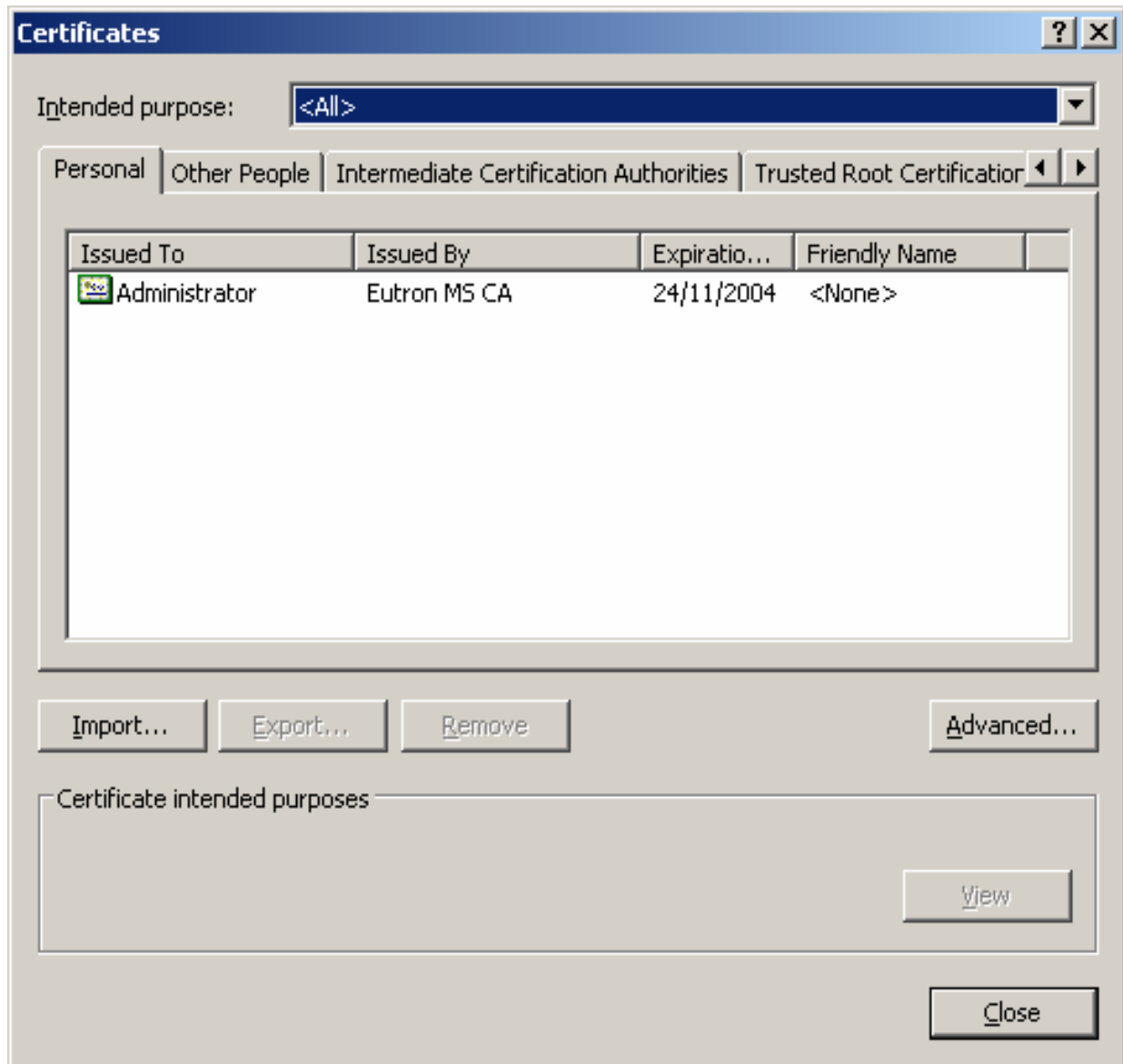
4. 2. 1 VIEWING CERTIFICATES THROUGH MICROSOFT CERTIFICATES STORE

To view the certificates and related details stored into a Cryptoidentity token:

- Right click on the **Internet Explorer icon** on the computer's desktop, select **Properties** and **Content** Tab. The following Window appears:

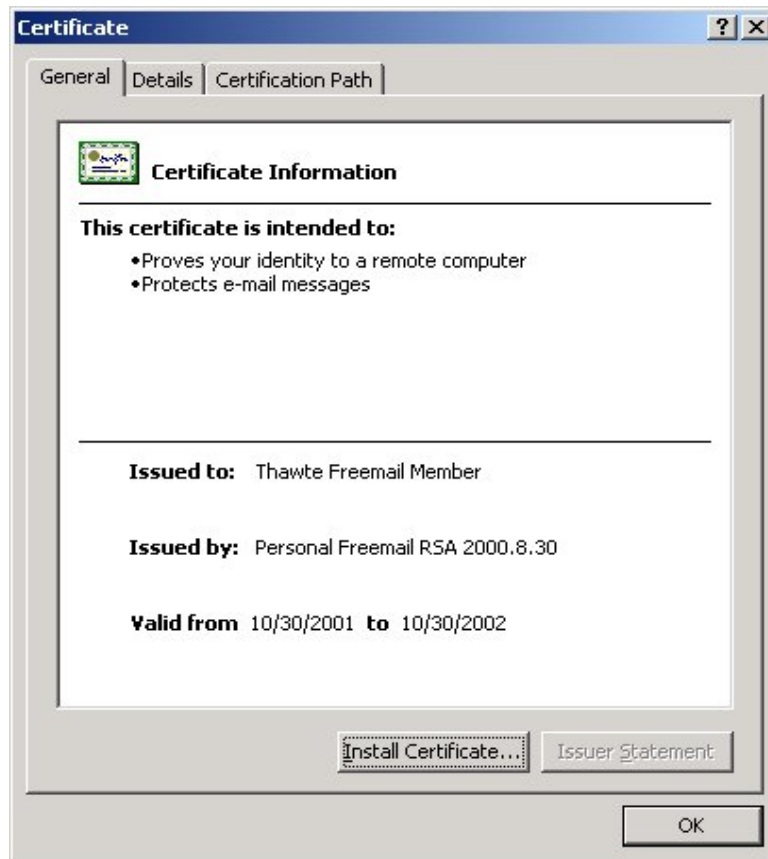


- Click on the **Certificates** button, the Certificates store appears :

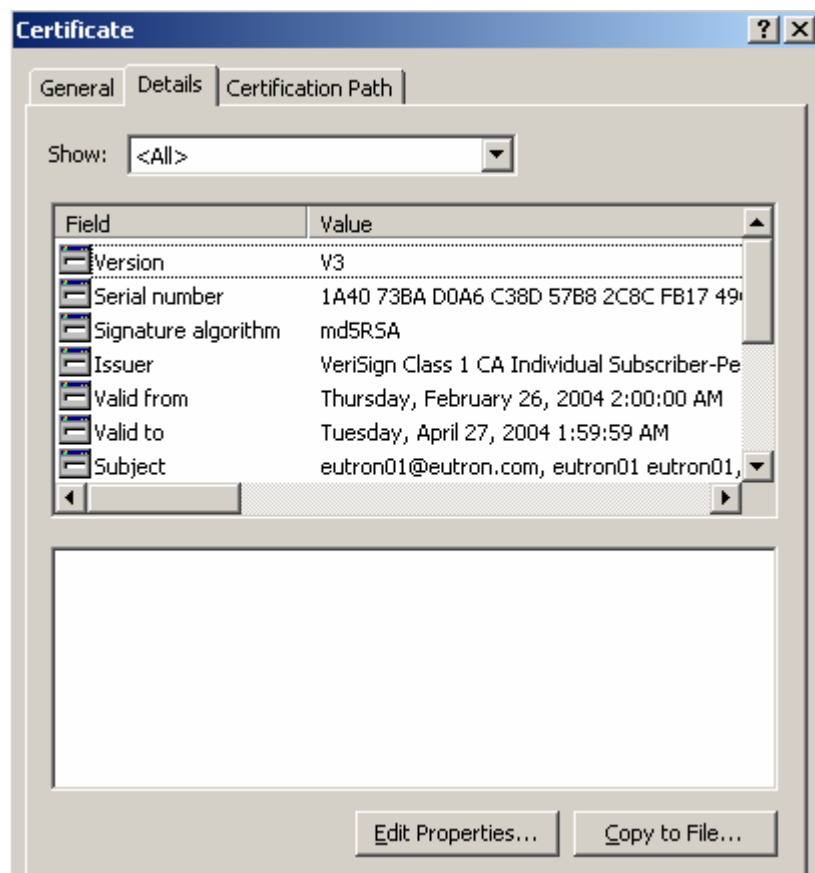


- From the **Personal** Tab is possible to view all the certificates (both the certificates stored into the Cryptoidentity token and the certificates present in the system certificate store).
- From the certificates list, select a certificate stored into the token and then click **View** to see its details.

- The certificate details window is displayed as follows:



- Clicking on the **Details** tab is possible to see all the certificate details (Serial Number, Issuer, Expiration date, e-mail associated, etc.):





If a certificate stored into a Cryptoidentity is properly displayed in the system certificates list, it is available for the use with common Microsoft Applications and any other software compliant with the Microsoft Crypto API/CSP mechanism (e.g., Cisco VPN client).

Further more, **PKCS#11 applications** (i.e. Netscape) will be able to work with the certificate.



If a certificate stored into a Cryptoidentity is not properly displayed in the system certificates list, it is NOT available for the use with common Microsoft Applications and any other software compliant with the Microsoft Crypto API/CSP mechanism.

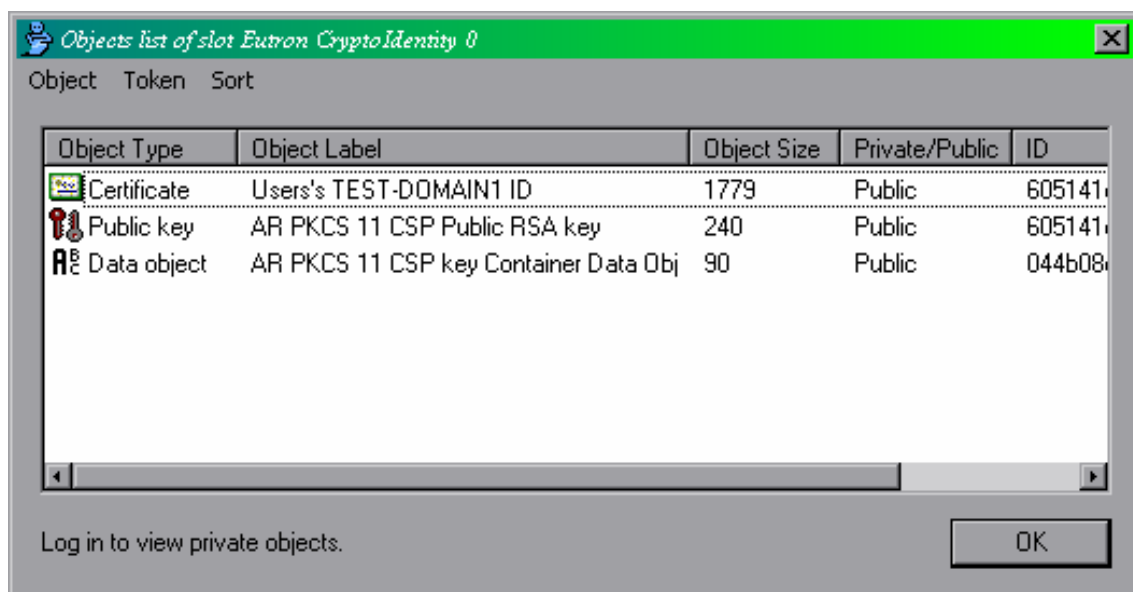
Check if the correct process has been followed during the store of the certificate (refer to section "4.1 Storing Digital Certificates into Cryptoidentity").

Viceversa, the certificate could be available to PKCS#11 applications (i.e. Netscape).

4. 2. 2 VIEWING CERTIFICATES THROUGH ARGENIE UTILITY

To view the certificates and related details stored into a Cryptoidentity token:

- Run the program **AR Genie** in **advanced mode** (refer to section "3.1 ARGenie")
- Make sure a Cryptoidentity token is plugged into an USB port and select the "Token->View Objects" menu (or double-click the Cryptoidentity present in the Slot List.)
- The following window appears:



- The window contains a list of the digital certificates and other public keys and objects stored into the Cryptoidentity. To see also the private objects, login to the token (select **Token->Login** menu and insert the Cryptoidentity PIN).
- To see the details of an object, just double-click it or select the Objects-> View menu.
- You can sort the object list by object Size, Type, Label, ID, Private.

4. 3 SUGGESTED POLICY FOR BACKUP OF DIGITAL CREDENTIALS

If you are about to use the Cryptoidentity token for day-by-day professional activity—protecting email, accessing corporate network, signing documents, etc.—it is essential that the digital credentials used are properly backed up.

More specifically, if for any reason an *encryption* certificate and associated private key becomes inaccessible (or the Cryptoidentity containing the certificate is lost), it will not be possible to decrypt documents and emails previously encrypted with it.

To prevent this, make sure a backup exists on some secure media for your private keys (and certificates).

For example, generate first of all the keys and certificate outside of the token and copy them on a CDROM (or floppies) to be kept in a safe place (locker). Then, gain the portability and security of storing the credentials into the Cryptoidentity by importing them into it. You can use *ImportPKCS12 utility*, for example, to import the certificates and cryptographic keys.

4. 3. 1 HOW TO BACKUP DIGITAL CREDENTIALS

To backup the digital credentials, generate and save the digital certificate in the Microsoft Certificate System Store and then export it to a file. Then, import the certificate into the Cryptoidentity.

Next steps describes the complete process to obtain a certificate from Verisign CA, save it in a file (including associated cryptographic keys) and then import it into the Cryptoidentity.

You can apply the same process also for certificates issued by other CAs.

Follow these steps:

- Follow carefully the instructions explained in the section "4.1.2.1 Verisign" to obtain a certificate from Verisign CA.

Cryptoidentity User Guide – 4. Managing Digital Certificates with Cryptoidentity



In the Verisign **"Complete Enroll Form"** page, DO NOT chose the "AR Base Cryptographic provider" as "CSP". To generate a certificate into the Microsoft System Store instead of into the Cryptoidentity token, select **"Microsoft Base Cryptographic Provider v 1.0"** as "CSP" :

Cryptographic Service Provider Name

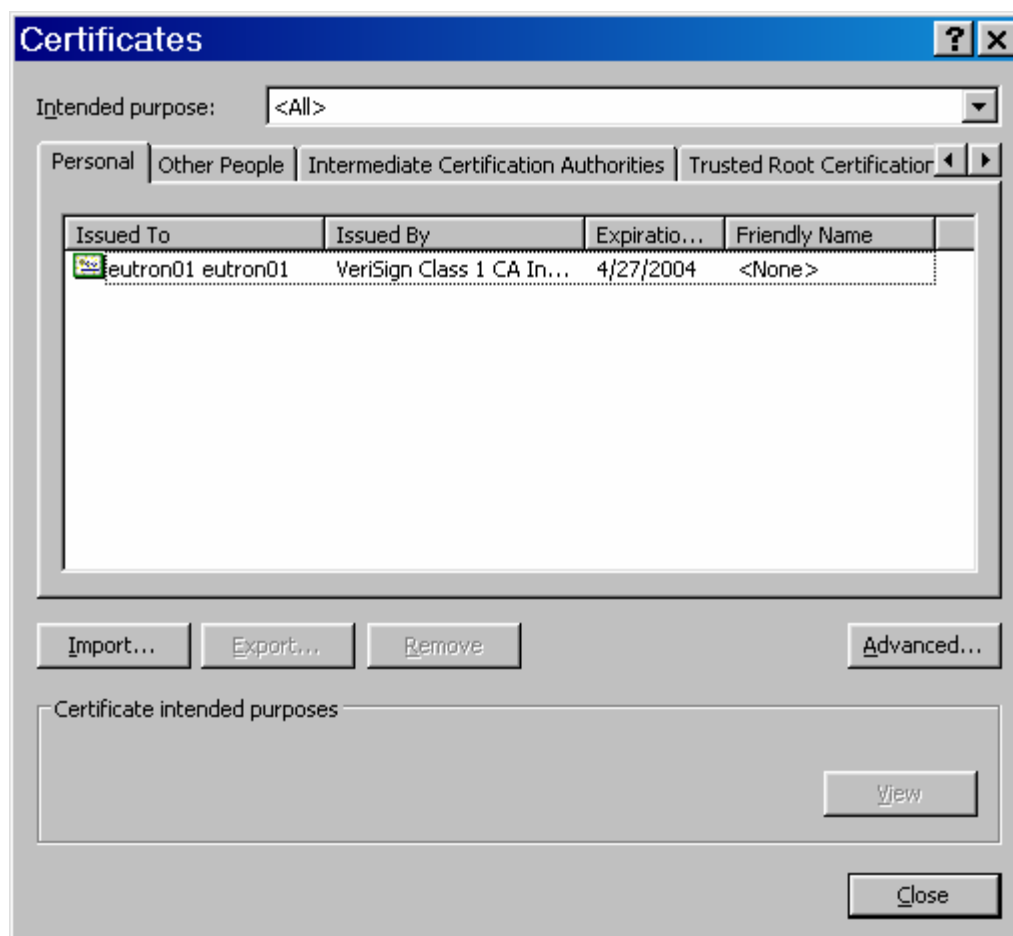
Microsoft Base Cryptographic Provider v1.0

- Complete the procedure as described in the section "4.1.2.1 Verisign" to obtain your digital certificate (check e-mail ,pick-up digital ID, install digital ID).

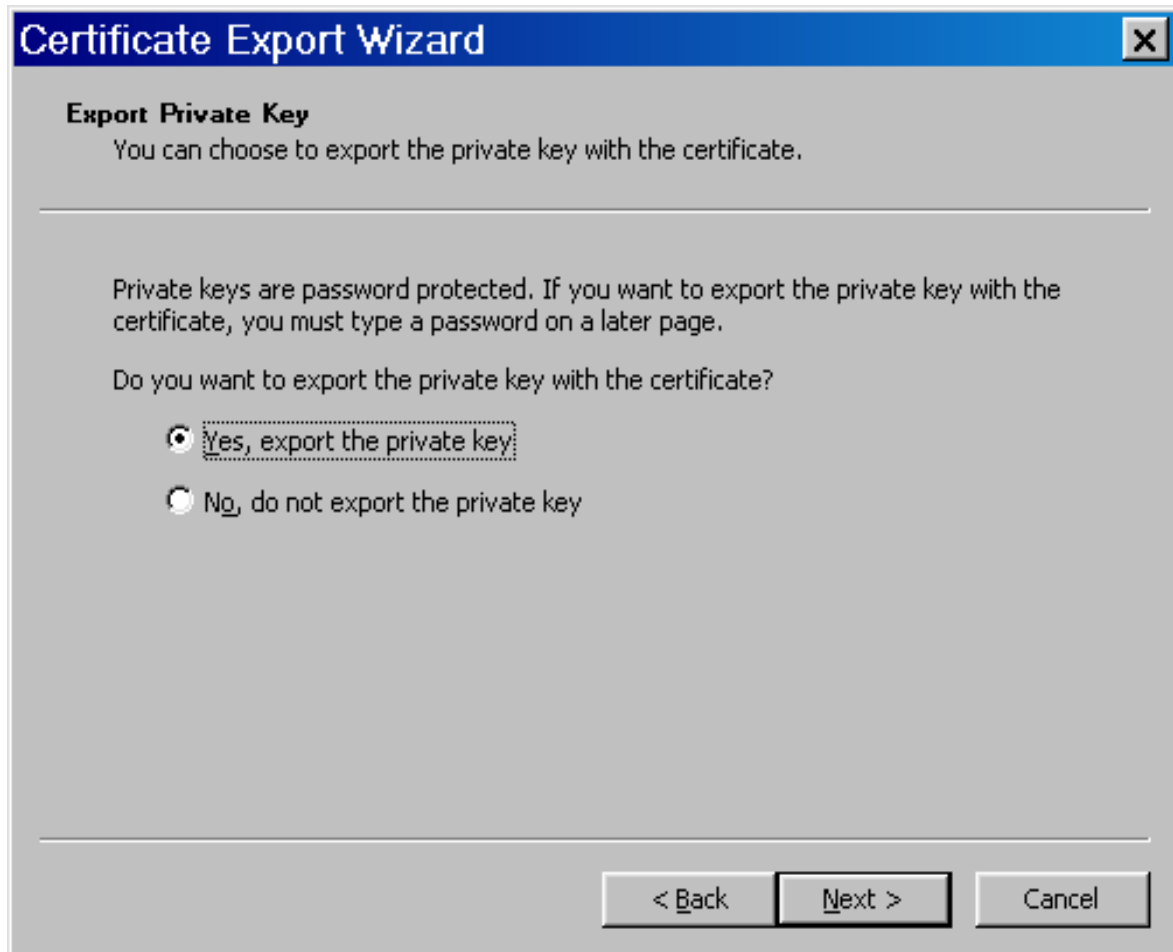


When enrolling from other Cas, follow the proper enrollment procedure. Just remember to specify **"Microsoft Base Cryptographic Provider v 1.0"** as "CSP" to put the issued certificate into the Certificate System Store.

- Once the digital certificate is installed in the Microsoft System Store, export it by saving it into a .pfx/.p12 file. To do this, access the Certificates System Store by right-clicking the **Internet Explorer icon** on the computer's desktop, select **Properties** and **Content Tab**.
- Click on the **Certificates** button, the Certificates store appears:

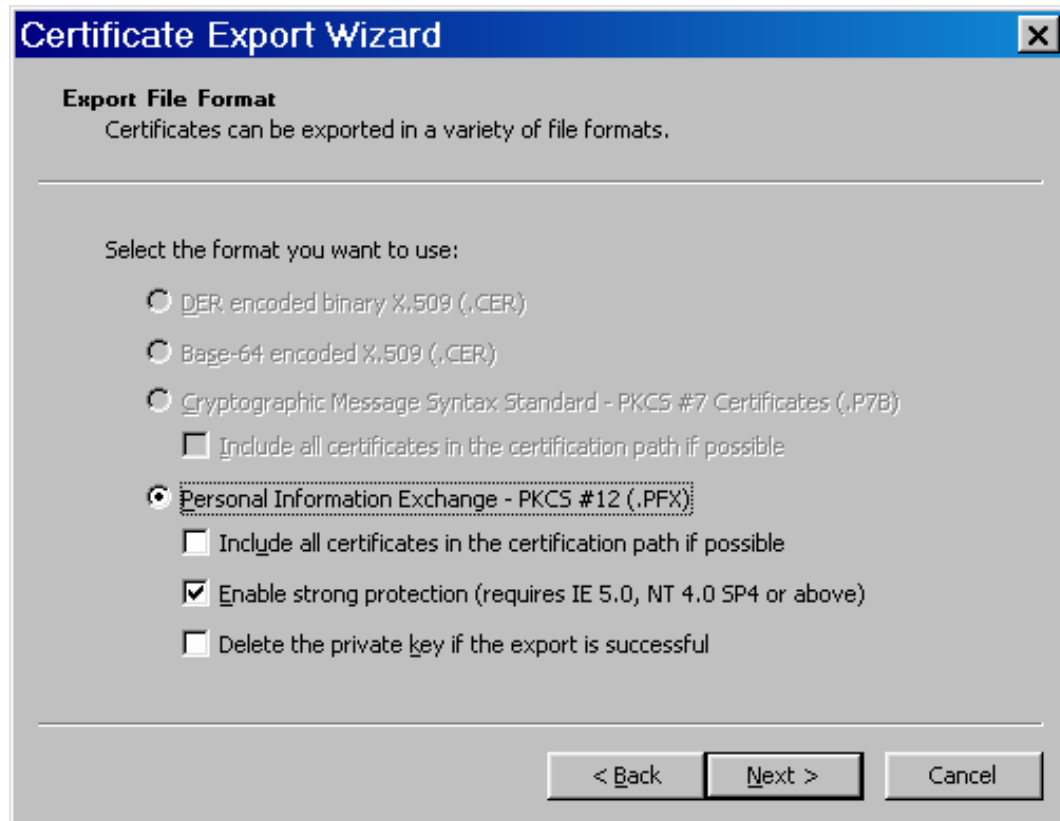


- The digital certificate that has just been issued into the Certificate System Store should be present in the **Certificates** list. In the example, the "Eutron01" certificate issued from Verisign CA is present.
- Select the certificate and press the **Export** button.
- The "**Certification Export Wizard**" window appears. Click Next.
- Select the "Yes, export the private key" option:



If the private key associated to a digital certificate is not exported into the PKCS#12 file, it is not possible to use that digital certificate for normal usage with Cryptoidentity after the importing process.

- Select the PKCS#12 format to create a .pfx or .p12 file.



Certificate Export Wizard

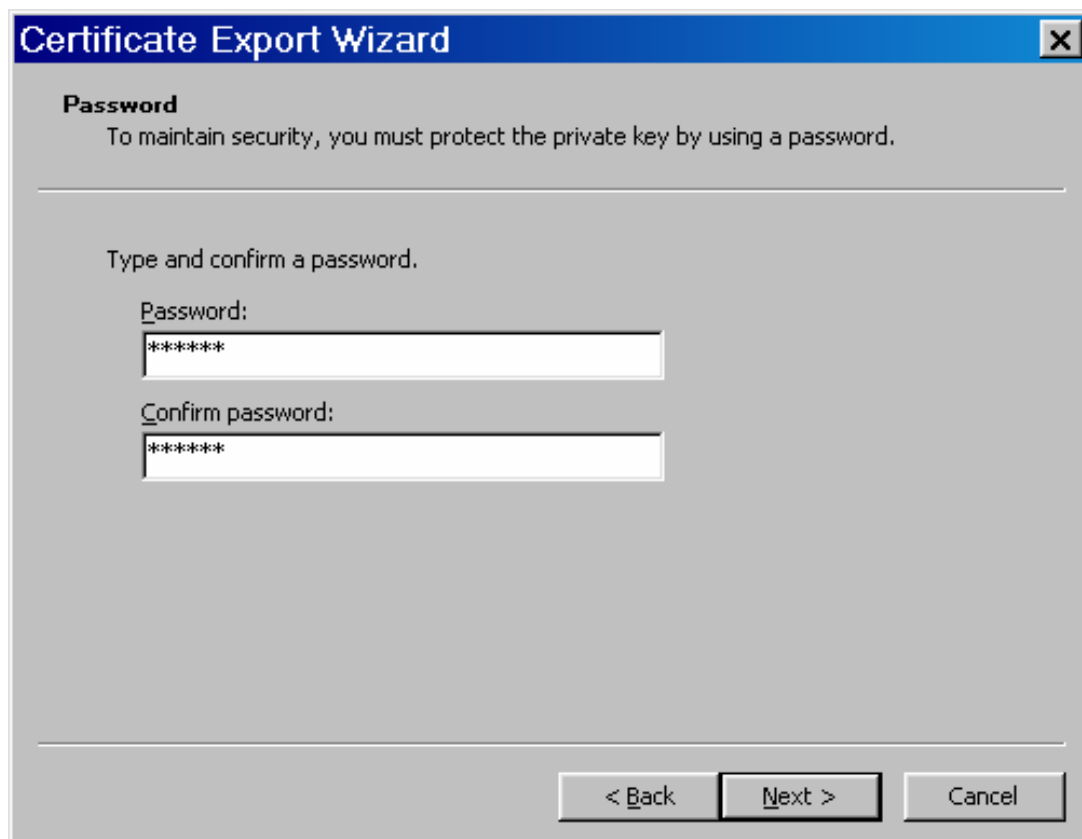
Export File Format
Certificates can be exported in a variety of file formats.

Select the format you want to use:

- ☐ DER encoded binary X.509 (.CER)
- ☐ Base-64 encoded X.509 (.CER)
- ☐ Cryptographic Message Syntax Standard - PKCS #7 Certificates (.P7B)
 - ☐ Include all certificates in the certification path if possible
- ☒ Personal Information Exchange - PKCS #12 (.PFX)
 - ☐ Include all certificates in the certification path if possible
 - ☒ Enable strong protection (requires IE 5.0, NT 4.0 SP4 or above)
 - ☐ Delete the private key if the export is successful

< Back Next > Cancel

- Set a password to protect your digital credentials and private key.



Certificate Export Wizard

Password
To maintain security, you must protect the private key by using a password.

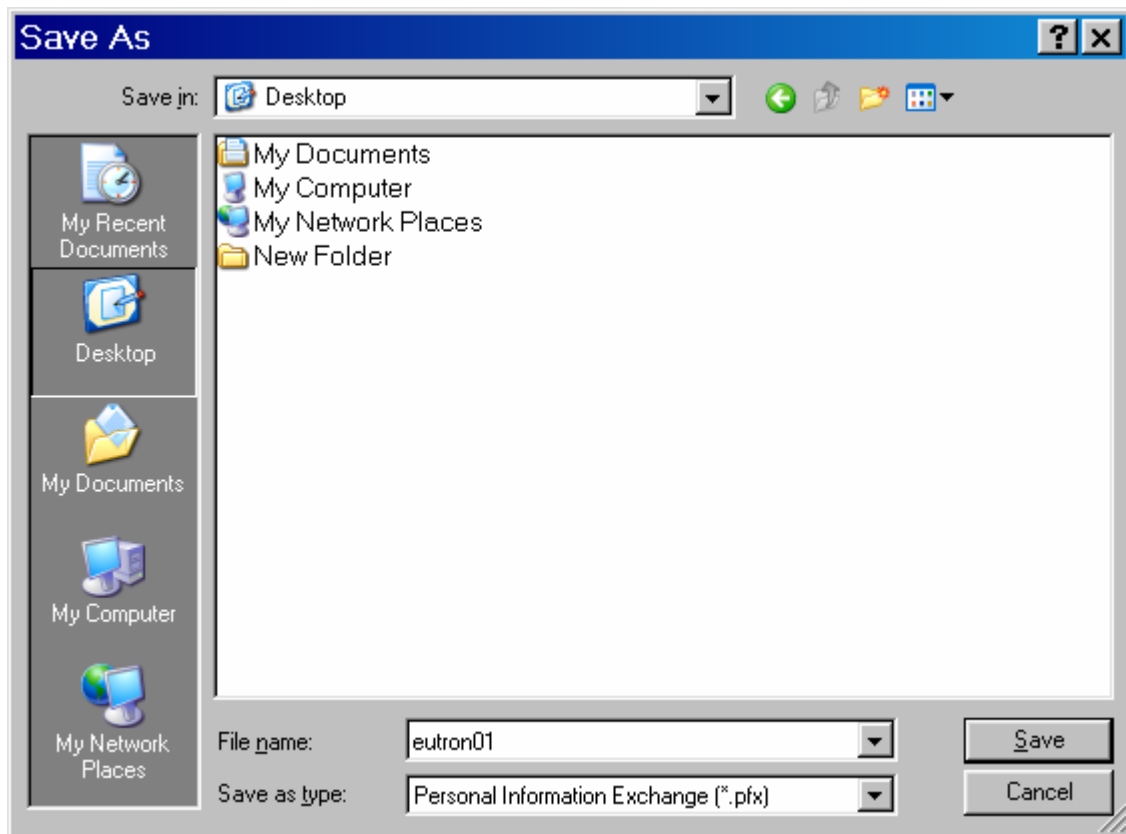
Type and confirm a password.

Password:

Confirm password:

< Back Next > Cancel

- Set the name of the .pfx or .p12 file that is about to be created.



- A summary appears. Click **Finish** to complete the Exporting process.



Cryptoidentity User Guide – 4. Managing Digital Certificates with Cryptoidentity

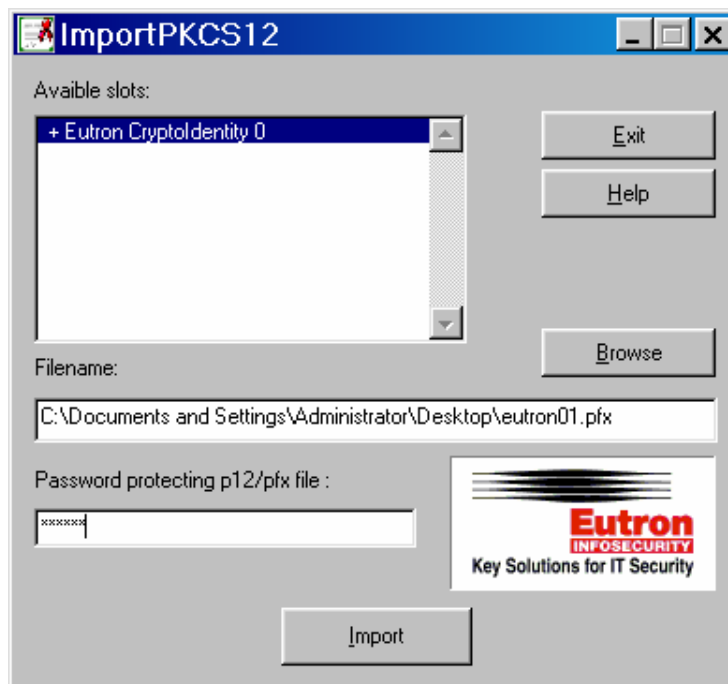
- A warning message appears to inform that the private key associated to the digital certificate is about to be exported. Click **OK**.



- A confirmation message appears. The .p12 or .pfx file is created and contains the backup of digital credentials (including the private key).



- It is now possible to import the PKCS#12 file created into the Cryptoidentity token. In the example is used the PKCS12Import utility for the importing process. See sections "4.1.3 Certificates imported from file" and "3.4 ImportPKCS12" for detailed instructions.



- Put the backed up digital credentials (file .p12 / .pfx) into a security media.

5. WORKING WITH CRYPTOIDENTITY AND APPLICATIONS

This chapter provides detailed instructions on how to use Cryptoidentity with e-mail clients and PKI software (Entrust).

5.1 MAIL CLIENTS

Next sections explain the detailed instructions to configure Outlook Express, Microsoft Outlook and Netscape Messenger to send\receive **secure e-mails**.



Once properly configured for secure e-mails, it is possible through the most common e-mail clients to digitally sign and encrypt the emails using digital certificates and related cryptographic keys stored into Cryptoidentity.

5.1.1 OUTLOOK EXPRESS 5.x / 6

Next sections explain the detailed instructions to configure Outlook Express to send\receive secure e-mails using the Cryptoidentity token.

5.1.1.1 OUTLOOK EXPRESS CONFIGURATIONS

To enable secure e-mails with Outlook Express follow these steps:

- Obtain a digital certificate and store it into Cryptoidentity. Refer to section "*4.1 Storing certificates into Cryptoidentity*" for detailed instructions.

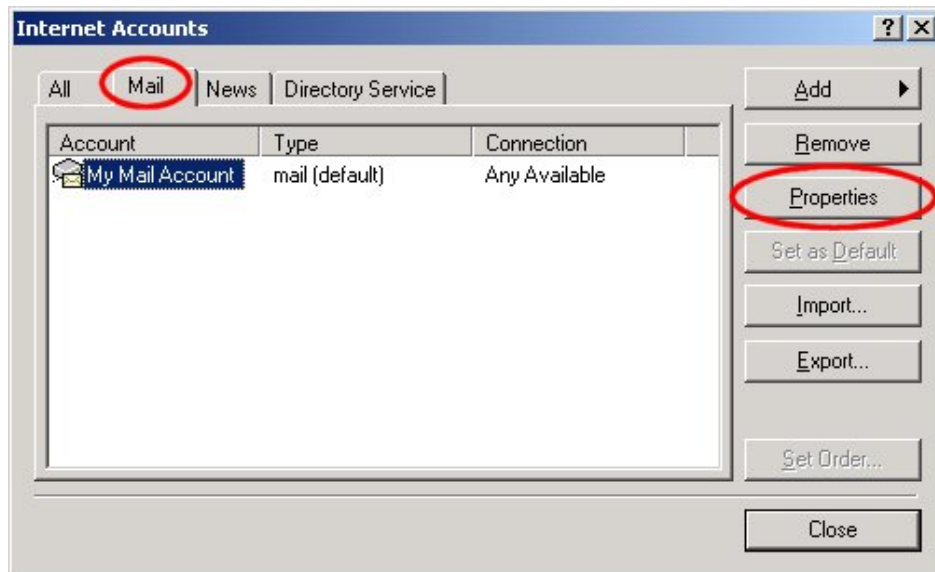


The digital certificate must be issued to the account (e-mail address) to be used for secure e-mails.

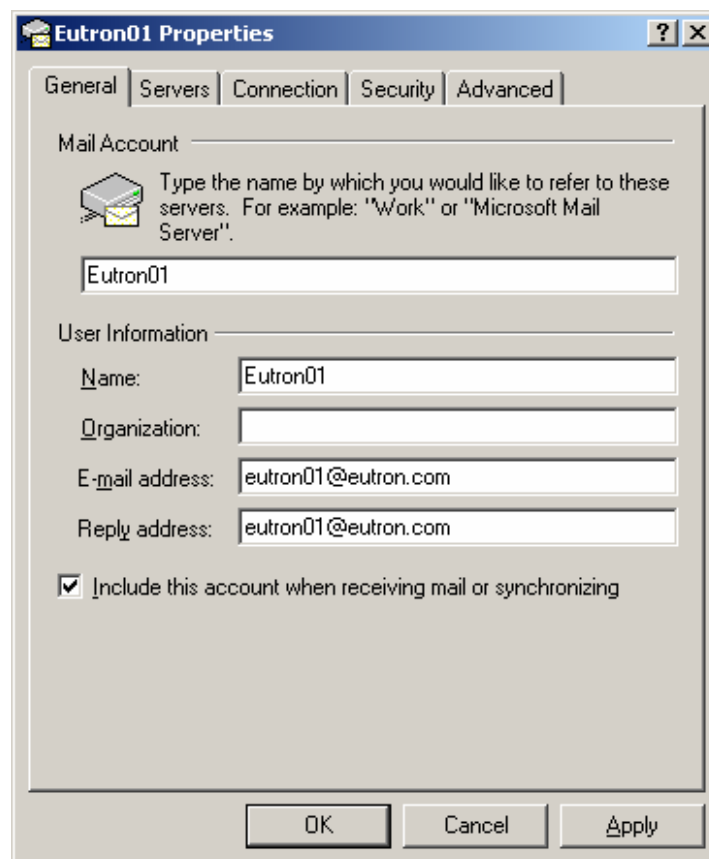
Configure Outlook Express following these steps:

- Plug the Cryptoidentity containing the digital credentials into an USB port.
- Make sure the certificate stored into the Cryptoidentity is available into the System Certificate Store. Refer to section "*4.2.1 Viewing Certificates through Microsoft certificates store*" for detailed instructions.
- Run Outlook Express and select the **Tools->Accounts** menu.

- Select the **Mail** tab from the Internet Accounts screen.



- Select the e-mail account to be used for secure e-mails and press the **Properties** button. The properties screen for the selected mail account is displayed.

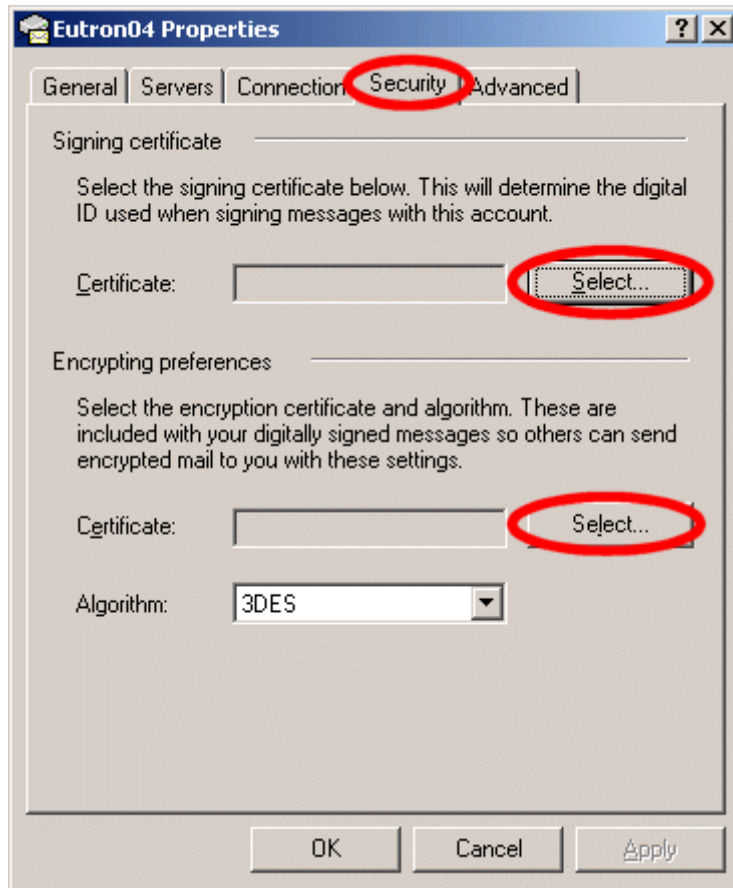


Make sure to fill the "E-mail address" and "Reply address" fields with the e-mail address for which the certificate has been issued.

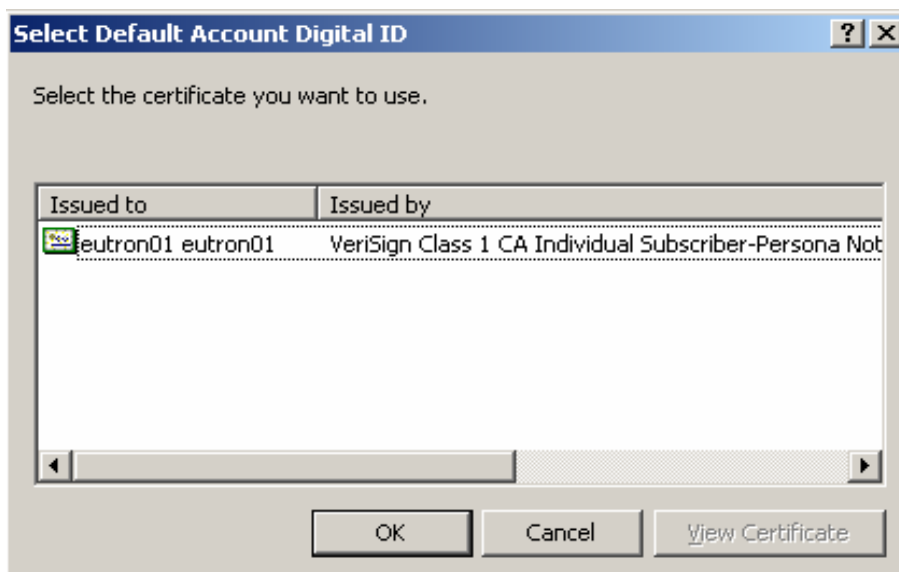
You can obtain the e-mail address associated to the certificate by viewing the certificate details. Refer to section "4.2.1 Viewing Certificates through Microsoft certificates store" for detailed instructions.

Cryptoidentity User Guide – 5. Working with Cryptoidentity and Applications

- Select the **Security** tab from the account properties screen.
- Select the digital certificate issued to the current account (e-mail address) to allow Outlook Express to **digitally sign** the e-mails. Press the **Select** button in the **Signing Certificate** section. Outlook Express lists all the certificates issued to the current account, including the certificates stored into Cryptoidentity.



- Highlight the certificate and press **OK**.





If no digital certificates appear in the list, it means that no certificates issued to the current account are found in the System Certificate Store. Make sure that during the certificate enrollment, the e-mail address of the current account has been specified.

- Repeat the process to select an **Encryption Certificate** if necessary. This allows other users to encrypt e-mails they send to you.
- Choose an **Encryption Algorithm** from the drop down box.
- Press **OK** to commit the new settings.



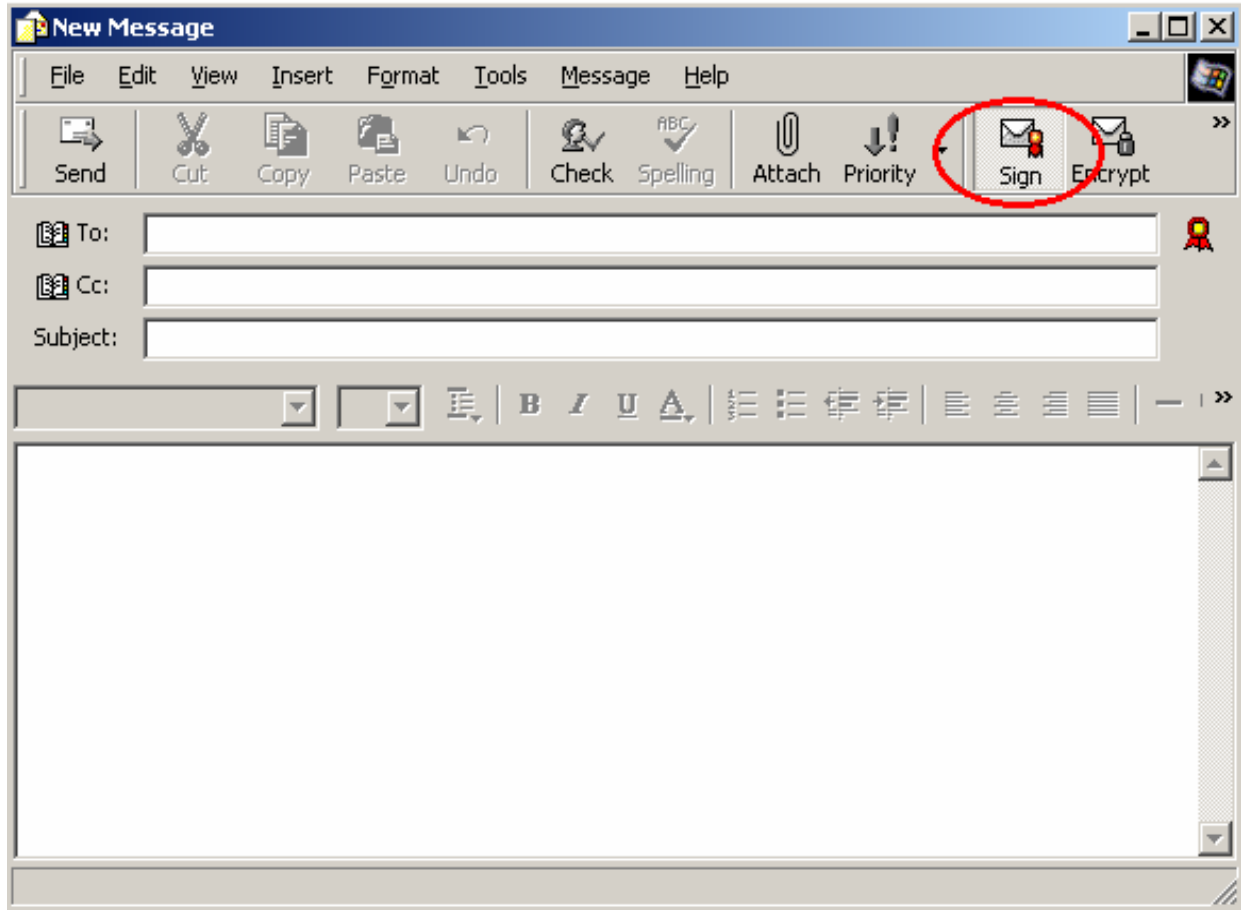
More information is available in the Outlook Express Help. View "Sending Secure Messages" under the "Creating and Sending Mail Messages" topic.

5.1.1.2 SECURE EMAIL-S WITH OUTLOOK EXPRESS

In order to send\receive secure e-mails with Outlook Express, follow carefully the instructions below.

To **digitally sign** the e-mails:

- Configure the Outlook Express account as explained in the section "*5.1.1.1 Outlook Express configurations*".
- Require a personal certificate for the account used and store it into Cryptoidentity token. Refer to section "*4.1 Storing certificates into Cryptoidentity* " for detailed instructions.
- Plug the Cryptoidentity containing the digital credentials used for digital signatures into a free USB port.
- Create a new message (select **New Mail** from the main windows)
- In the New Message Window, select the **Sign** option.

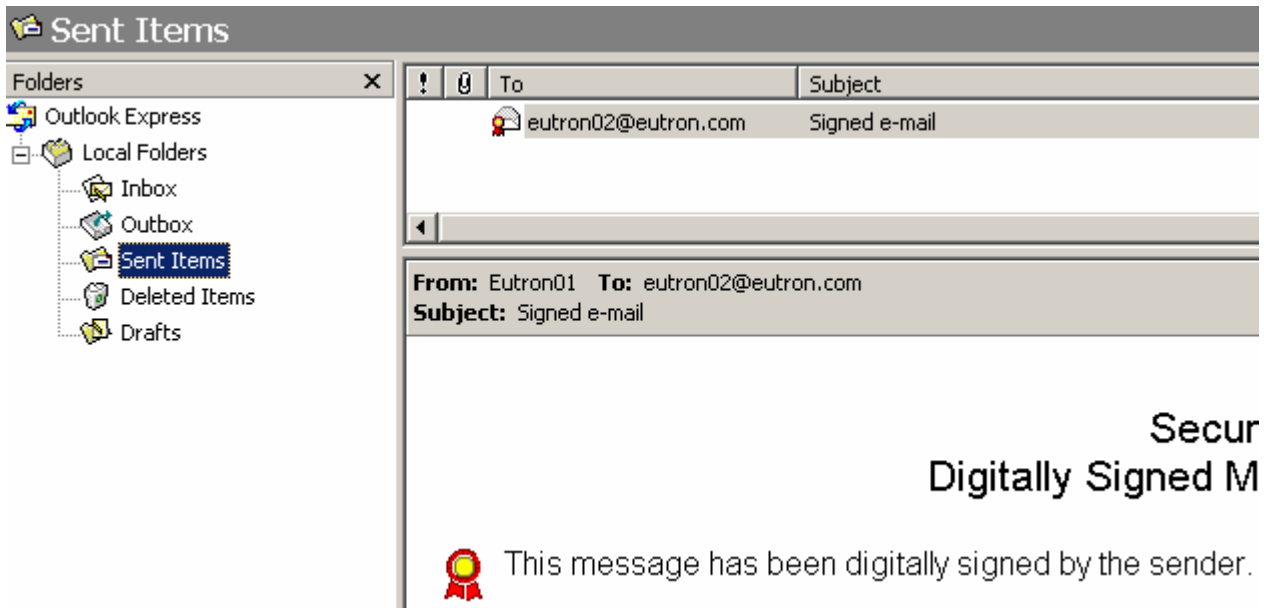


- Fill the recipient e-mail address and the subject fields and compose the message as usually. Then click **Send**.
- Outlook Express automatically signs the e-mail using the digital certificate stored into the Cryptoidentity. The Cryptoidentity PIN is required before the signed e-mail is sent:



Cryptoidentity User Guide – 5. Working with Cryptoidentity and Applications

- Open the **Sent Items** list, the e-mail appears with a red ribbon. This means it has been digitally signed:



To **encrypt** the e-mails:

- Obtain the digital certificates of the recipients for which you want to encrypt the e-mails. Each certificate must be added into the Outlook Express address book.



Once a digital certificate is contained into the personal address book and it is properly associated to a contact, it is possible to send encrypted e-mails to the contact.

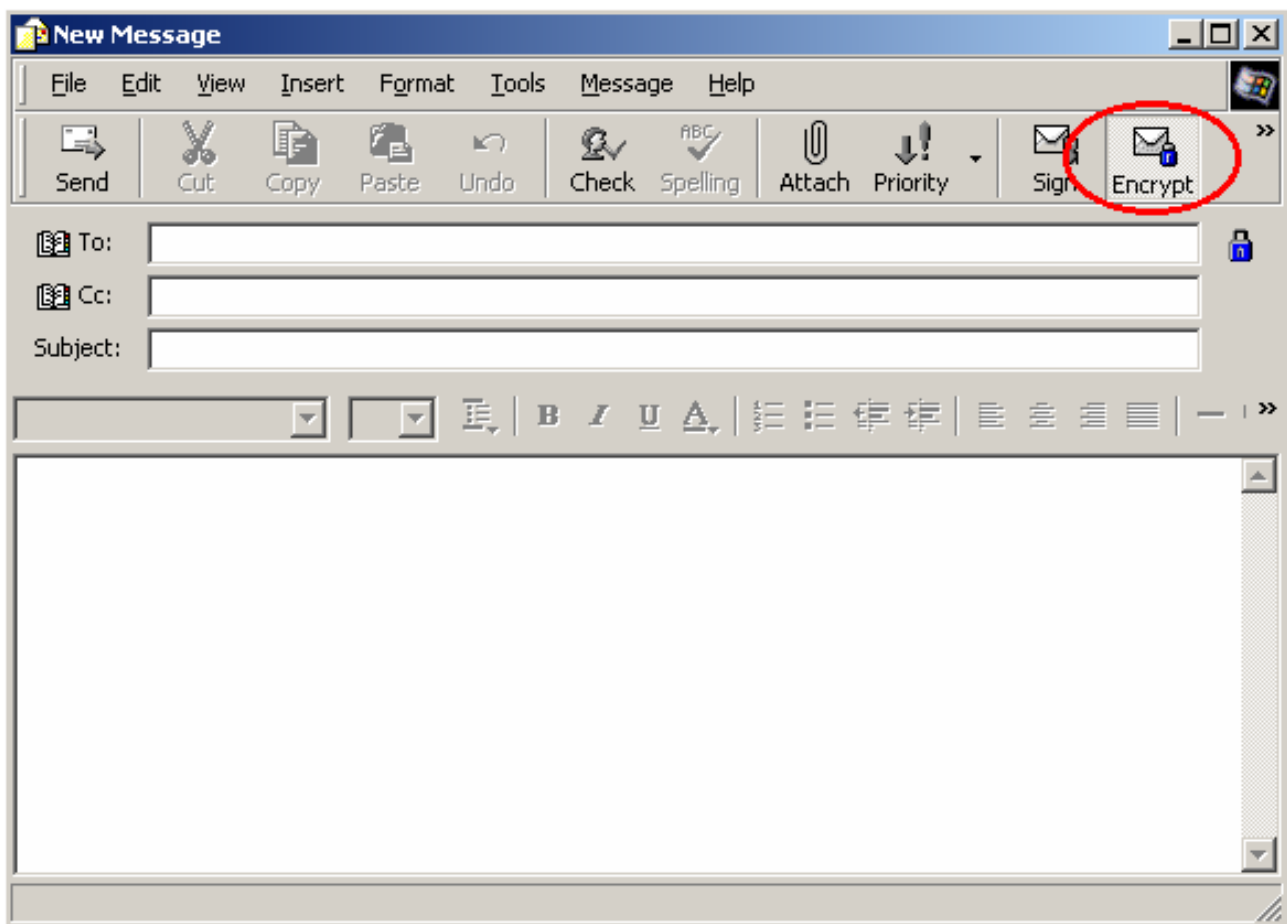
- There are two ways to obtain the digital credentials of a recipient and store them into the address book:
 - By mailing or transferring on diskette the certificate file. Ask the recipient to provide his digital credentials included in a file, and then import it into the address book.
 - In the Contacts address book, find the recipient (if it does not exist, create a new contact).
 - Open the contact and click the **Digital Ids** tab
 - Select the e-mail address to link the certificate from the **Select an e-mail address** drop-down list.
 - Click **Import**.
 - Browse for the certificate file to import.
 - Click **Open**.
 - If the e-mail address within the certificate does not match the e-mail address of the contact, an error message is displayed.

- By receiving a signed e-mail from the recipient. Signing an e-mail usually appends the digital certificate to the e-mail message.

-When a digitally signed e-mail is received and opened through Outlook Express (from version 5 on), a new contact (the e-mail sender) and the associated digital credentials are **automatically added** into the address book.

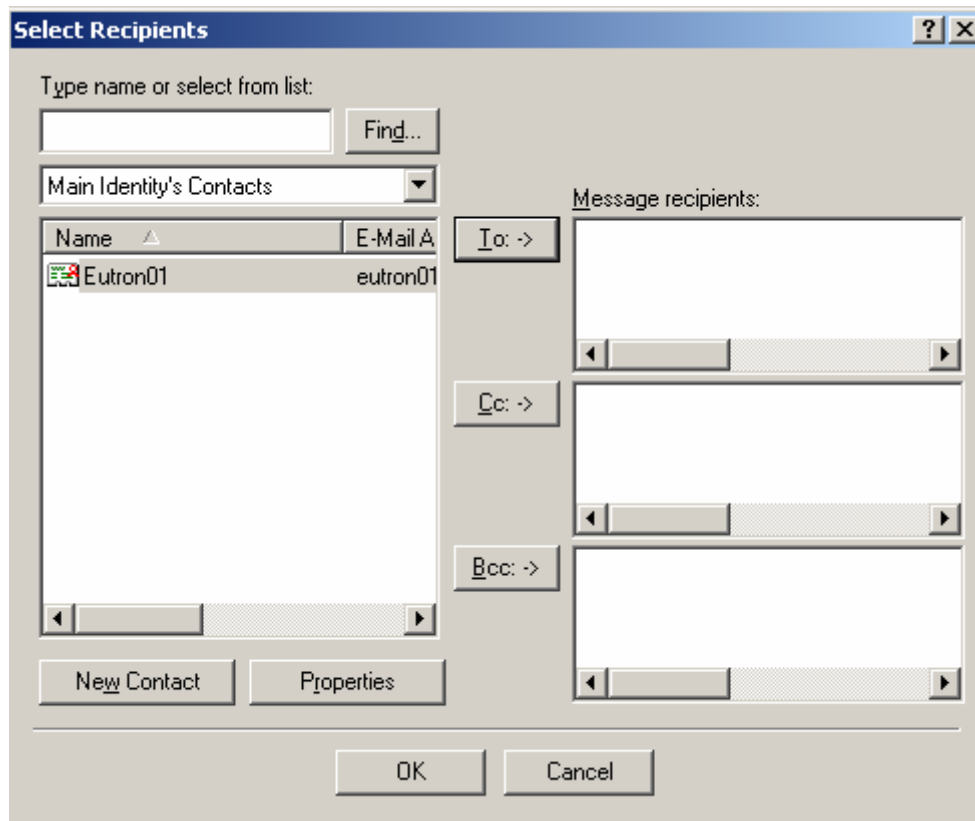
-If an earlier version of Outlook Express is used, open the signed e-mail and right click the mouse button on the sender. Select **Add to Address Book** to add a contact including the certificate into the address book.

- Create a new message (select **New Mail** from the main windows)
- In the New Message Window, select the **Encrypt** option. A blue padlock is displayed when an e-mail is encrypted.

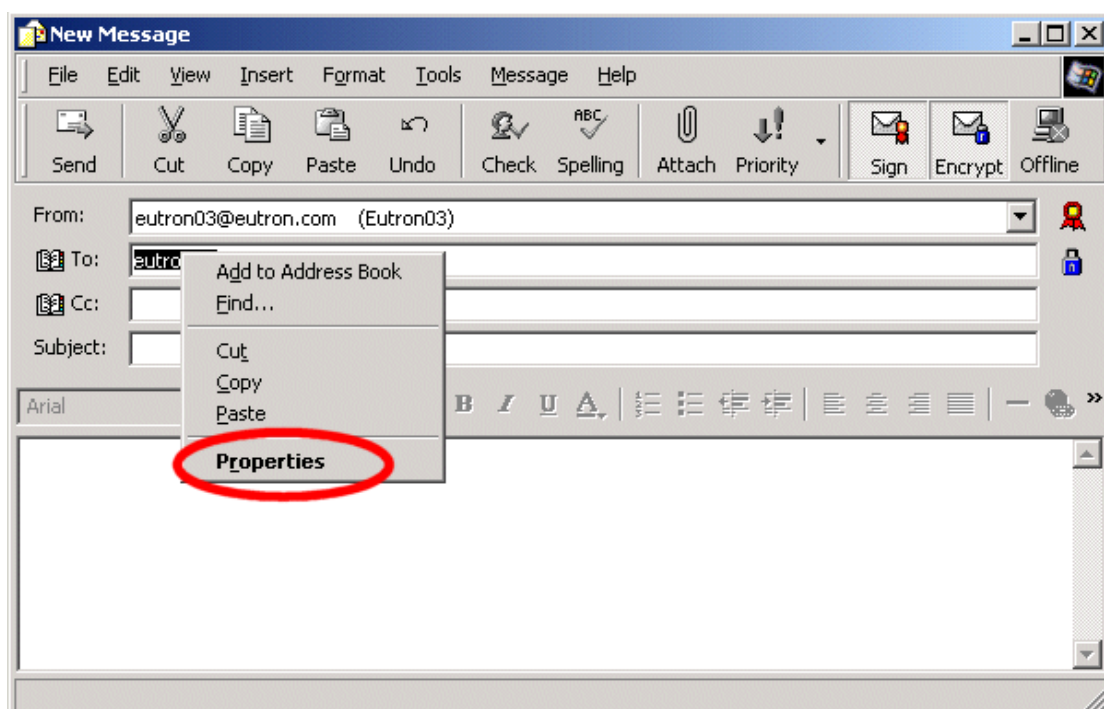


Cryptoidentity User Guide – 5. Working with Cryptoidentity and Applications

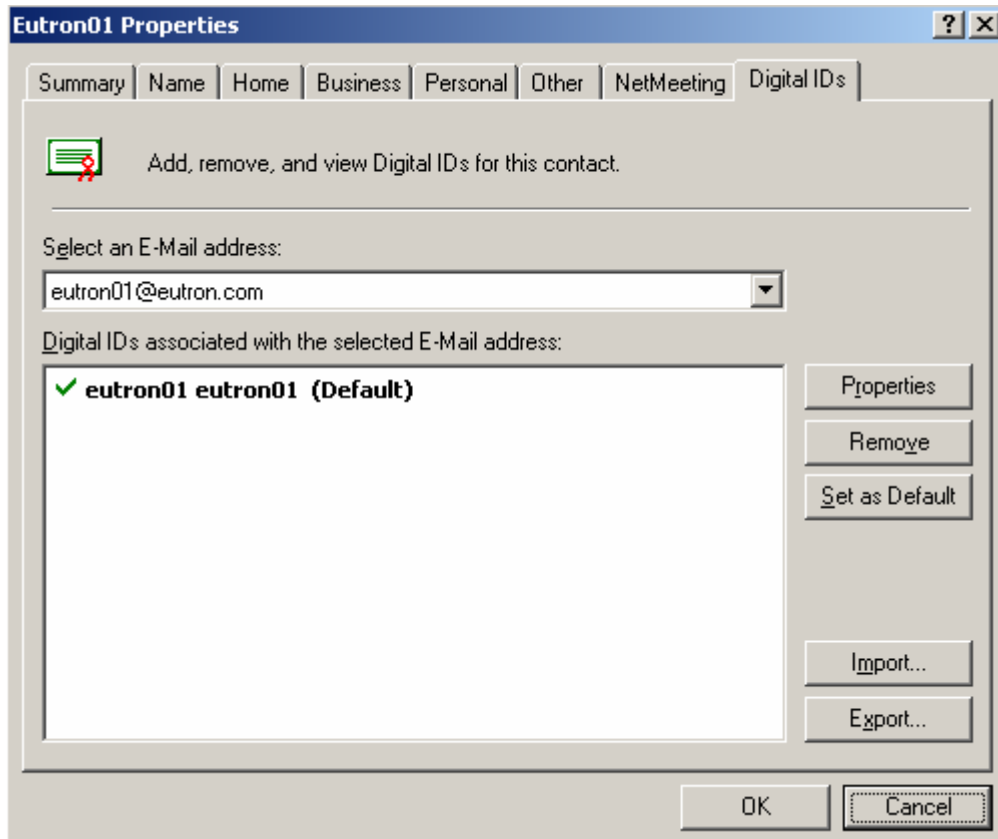
- Press **To:->** and select a recipient from the list. The recipients that have associated a Digital ID can be identified by a red ribbon in the address book:



- Double click the recipient or click **To: ->**.
- Click **OK** to add the recipient to the new e-mail message.
- To make sure that the contact has associated a digital certificate, right click on the recipient in the **To->** field and select **Properties**.

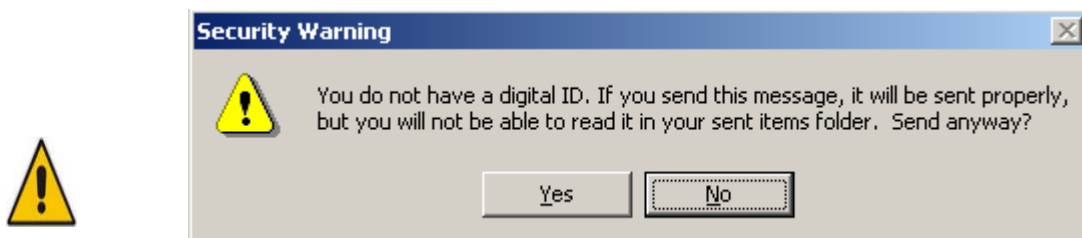


- Click the **Digital IDs** tab. The certificate associated to the contact is showed:



- Click **Send** to send the encrypted e-mail to the recipient.

*If no Cryptoidentity containing the sender digital credentials is plugged into an USB port, a message appears to advise that it will not be possible (for the sender) to decrypt the message anymore and to access it in the **Sent items** list. This is because the encryption is automatically performed using only the recipient digital credentials.*

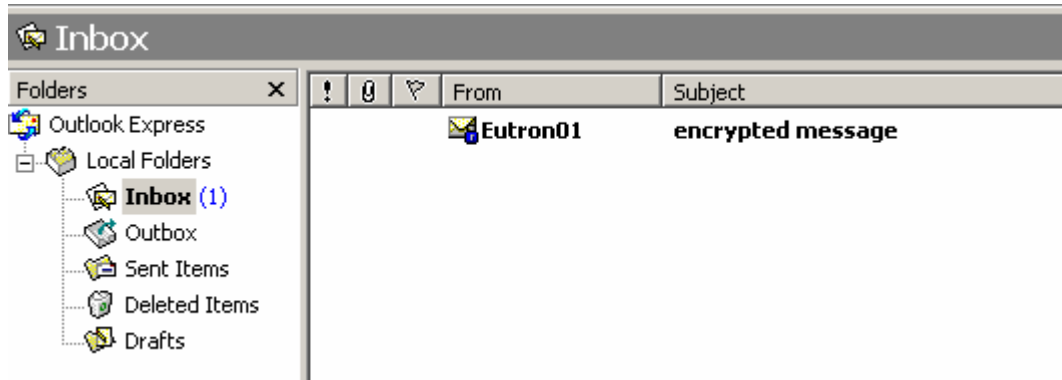


*Viceversa, if a Cryptoidentity containing the sender digital credentials is plugged into an USB port, for the sender it will be possible to decrypt the message and access it in the **Sent Items** list. This because the encryption is automatically performed including the recipient and the sender digital credentials.*

In any case, the recipient will decrypt the message using his own digital credentials.

To open an encrypted e-mail:

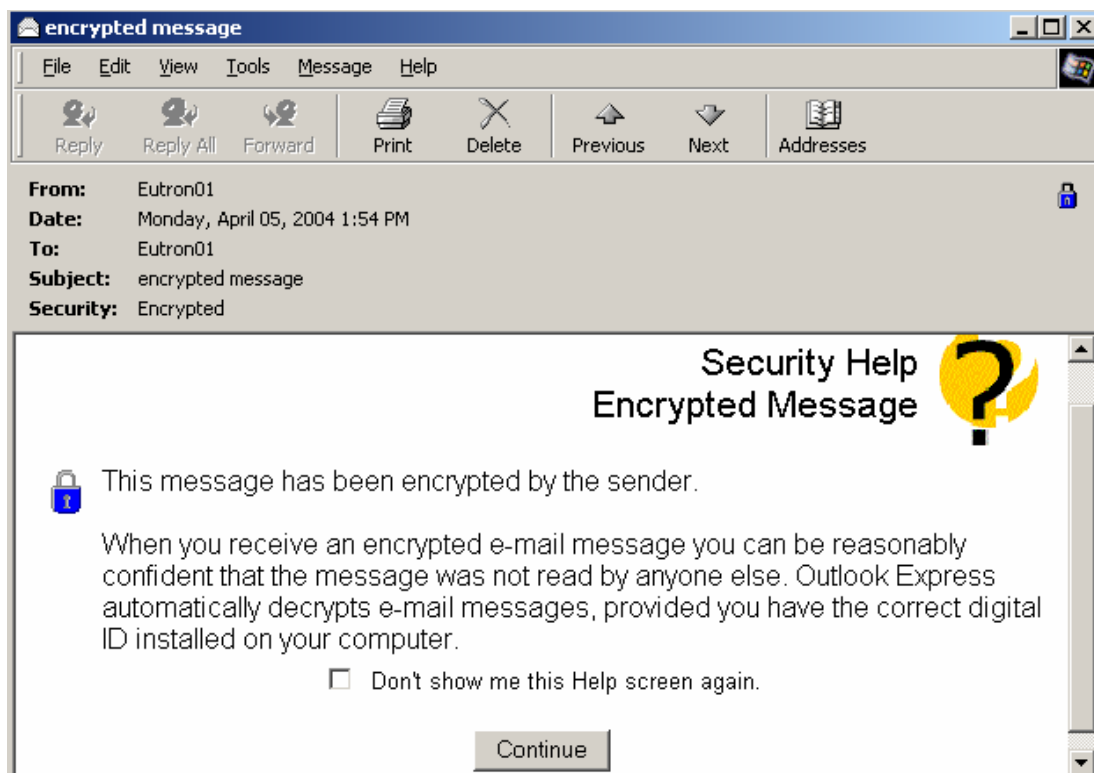
- Plug the Cryptoidentity containing the valid digital credentials to decrypt the message.
- Click on an encrypted e-mail to open it. The encrypted e-mails are recognized by a blue padlock:



- To decrypt and open the email, the Cryptoidentity PIN is required. Insert it to proceed:

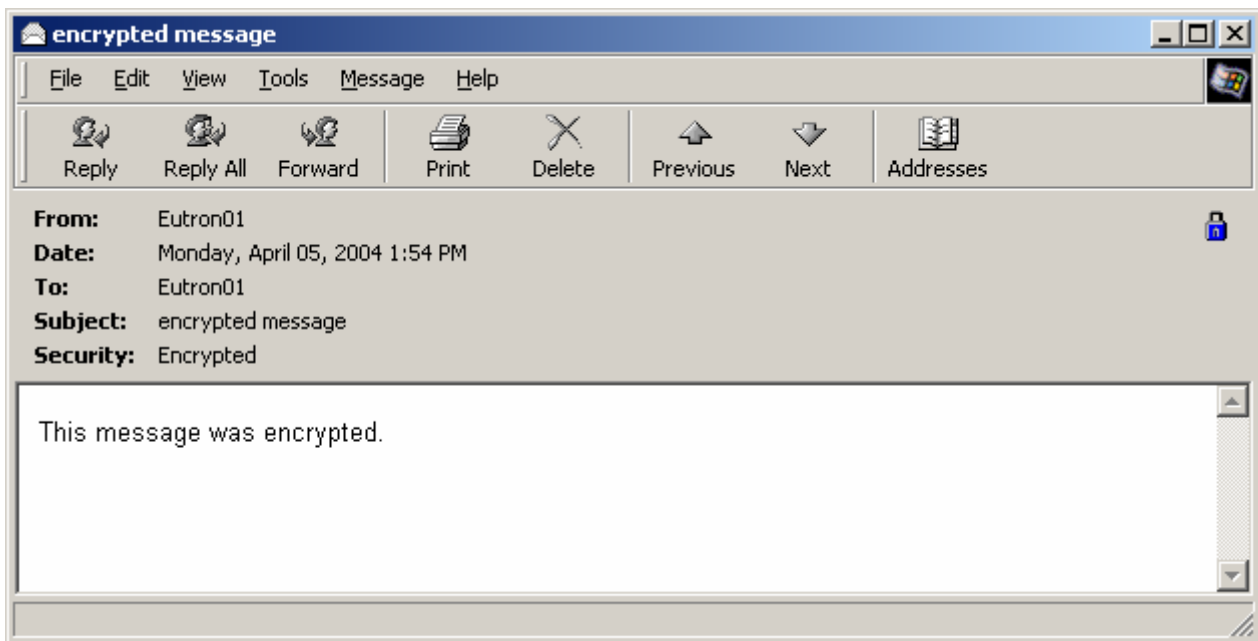


- A preview reminds that the message was encrypted. Click **Continue**:

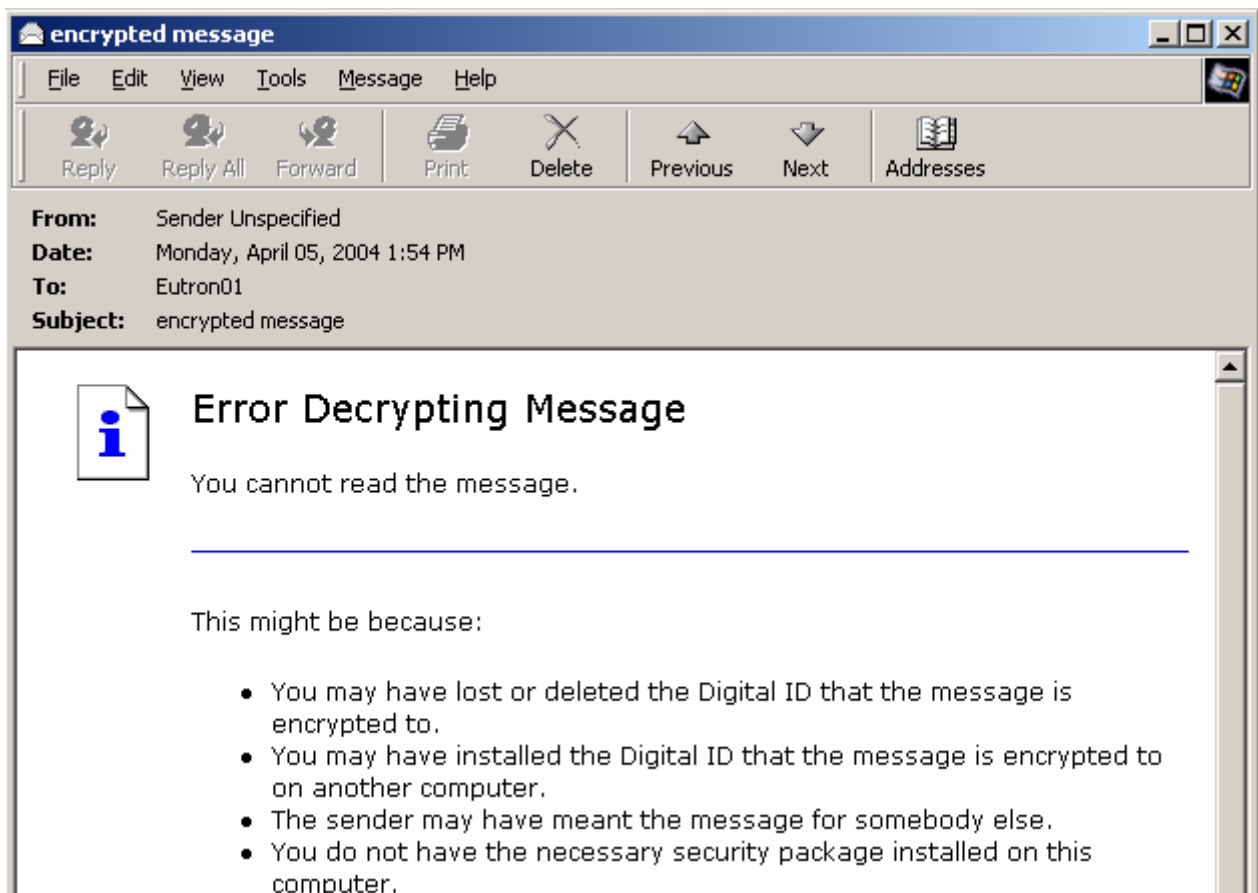


Cryptoidentity User Guide – 5. Working with Cryptoidentity and Applications

- The e-mail is automatically decrypted using the digital credentials stored into the Cryptoidentity token and it opens as usually:



Trying to open an encrypted e-mail without inserting the Cryptoidentity where the proper digital credentials are stored, an error appears:



5.1.2 MICROSOFT OUTLOOK 2000

Next sections explain the detailed instructions to configure Microsoft Outlook 2000 to send/receive secure e-mails using the Cryptoidentity token.

5.1.2.1 OUTLOOK EXPRESS CONFIGURATIONS

To enable secure e-mails with Microsoft Outlook 2000 follow these steps:

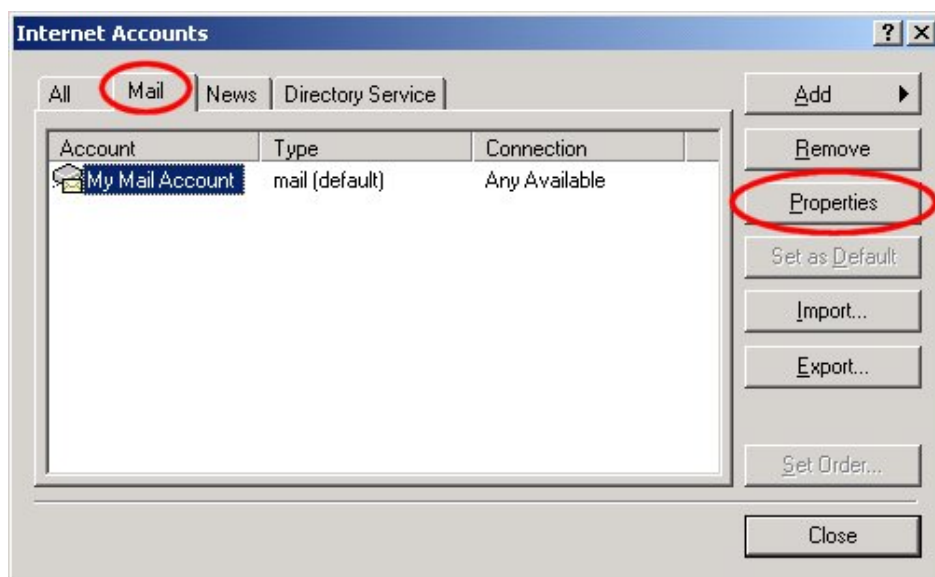
- Obtain a digital certificate and store it into Cryptoidentity. Refer to section "4.1 Storing certificates into Cryptoidentity" for detailed instructions.



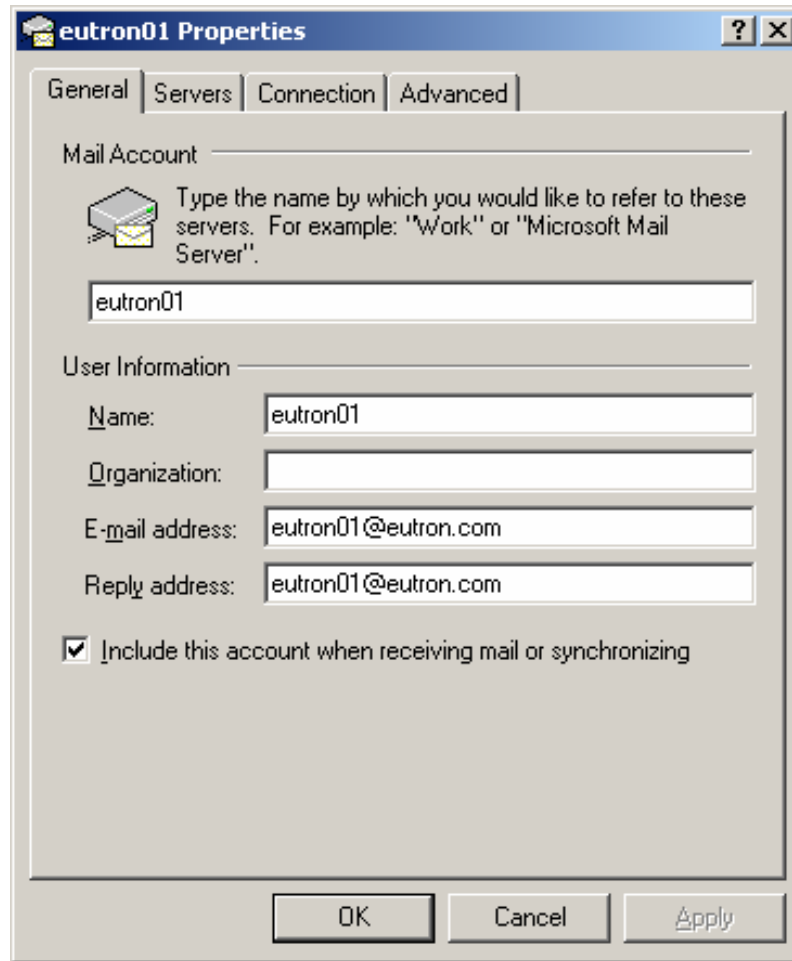
The digital certificate must be issued to the account (e-mail address) to be used for secure e-mails.

Configure Microsoft Outlook 2000 following these steps:

- Plug the Cryptoidentity containing the digital credentials into a USB port.
- Make sure the certificate stored into the Cryptoidentity is available into the System Certificate Store. Refer to section "4.2.1 Viewing Certificates through Microsoft certificates store" for detailed instructions.
- Run Microsoft Outlook 2000 and select the **Tools->Accounts** menu.
- Select the **Mail** tab from the Internet Accounts screen.



- Select the e-mail account to be used for secure e-mails and press the **Properties** button. The properties screen for the selected mail account is displayed.



eutron01 Properties

General Servers Connection Advanced

Mail Account

Type the name by which you would like to refer to these servers. For example: "Work" or "Microsoft Mail Server".

eutron01

User Information

Name: eutron01

Organization:

E-mail address: eutron01@eutron.com

Reply address: eutron01@eutron.com

☒ Include this account when receiving mail or synchronizing

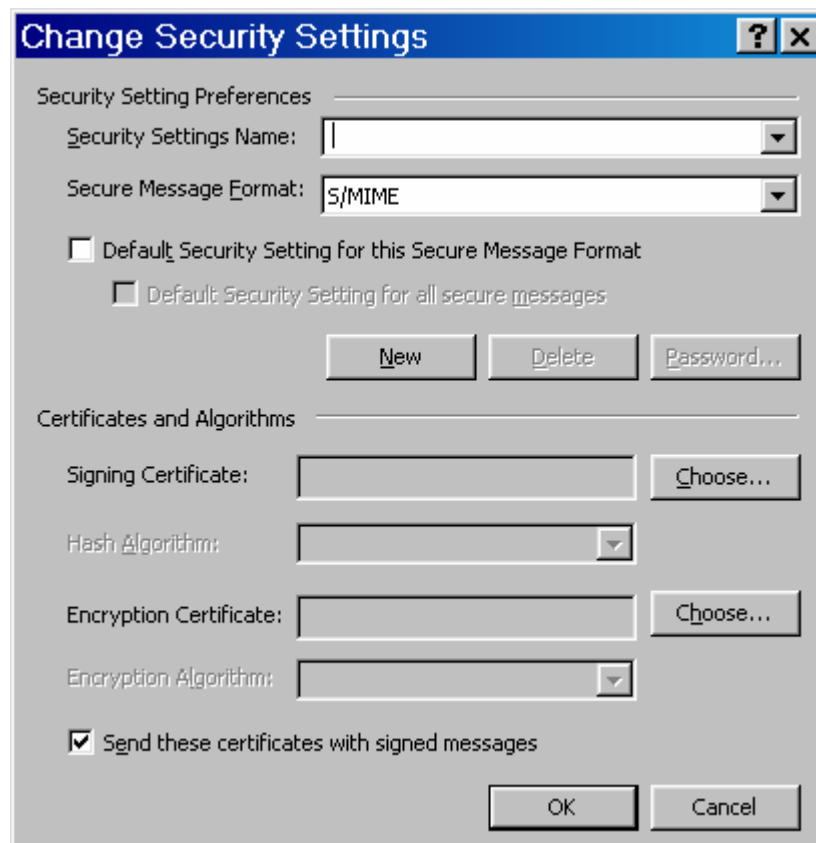
OK Cancel Apply



Make sure to fill the "E-mail address" and "Reply address" fields with the e-mail address for which the certificate has been issued. You can obtain the e-mail address associated to the certificate by viewing the certificate details. Refer to section "4.2.1 Viewing Certificates through Microsoft certificates store" for detailed instructions.

- Set the account settings and press **OK**. Return to the Microsoft Outlook 2000 main menu.
- From the Microsoft Outlook bar, expand the **Tools** menu and select the **Options** menu.
- Select the **Security** tab.

- Click the **Settings** button. The **Change Security Settings** window appears:



The **Change Security Settings** dialog box is divided into two main sections: **Security Setting Preferences** and **Certificates and Algorithms**.

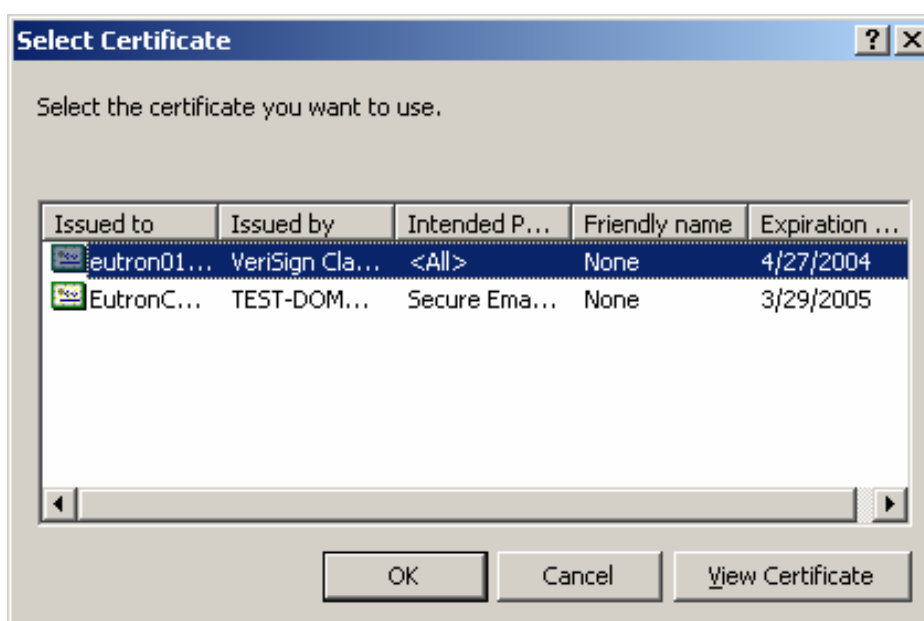
Security Setting Preferences:

- Security Settings Name:** A text field with a dropdown arrow.
- Secure Message Format:** A dropdown menu currently showing **S/MIME**.
- ☐ **Default Security Setting for this Secure Message Format**
- ☐ **Default Security Setting for all secure messages**
- Buttons: **New**, **Delete**, **Password...**

Certificates and Algorithms:

- Signing Certificate:** A text field with a **Choose...** button.
- Hash Algorithm:** A dropdown menu.
- Encryption Certificate:** A text field with a **Choose...** button.
- Encryption Algorithm:** A dropdown menu.
- ☒ **Send these certificates with signed messages**
- Buttons: **OK**, **Cancel**

- To select the certificate to be used for digitally signing e-mails, press the **Choose** button in the Signing Certificate section. Microsoft Outlook 2000 lists all the certificates issued to the current account, including the certificates stored into Cryptoidentity.
- Highlight the certificate issued to the current account and press **OK**.



The **Select Certificate** dialog box prompts the user to "Select the certificate you want to use." It displays a table of available certificates.

Issued to	Issued by	Intended P...	Friendly name	Expiration ...
Eutron01...	VeriSign Cla...	<All>	None	4/27/2004
EutronC...	TEST-DOM...	Secure Ema...	None	3/29/2005

Buttons: **OK**, **Cancel**, **View Certificate**



Make sure to select the digital certificate stored into Cryptoidentity that was issued for the mail account to be used for secure e-mails.

- Repeat the process to select an **Encryption Certificate** if necessary. This allows other users to encrypt e-mails they send to you.
- Choose an **Encryption Algorithm** from the drop down box.
- Fill in the **Security Setting Preferences** section according to your needs and select the “**Send these certificates with signed message**” option.

Change Security Settings

Security Setting Preferences

Security Settings Name: "nome modificabile"

Secure Message Format: S/MIME

☒ Default Security Setting for this Secure Message Format

☒ Default Security Setting for all secure messages

New Delete Password...

Certificates and Algorithms

Signing Certificate: VER02 EUTR02 Choose...

Hash Algorithm: SHA1

Encryption Certificate: VER02 EUTR02 Choose...

Encryption Algorithm: 3DES

☒ Send these certificates with signed messages

OK Cancel

- Press **OK** to confirm the new settings.



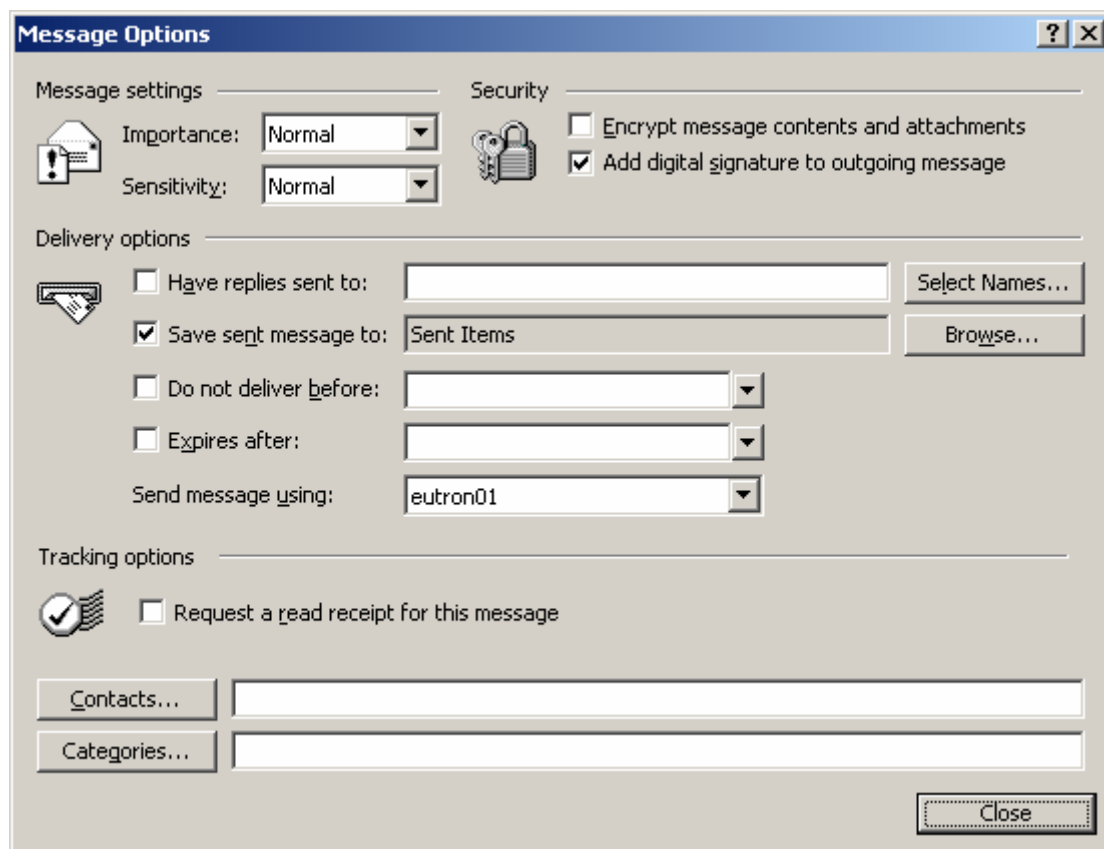
More information is available in the Microsoft Outlook 2000 Help. View, for example, "Using security features" under the "Using Internet Only Features" topic.

5.1.2.2 SECURE EMAIL-S WITH MICROSOFT OUTLOOK 2000

In order to send/receive secure e-mails with Microsoft Outlook 2000, follow carefully the instructions below.

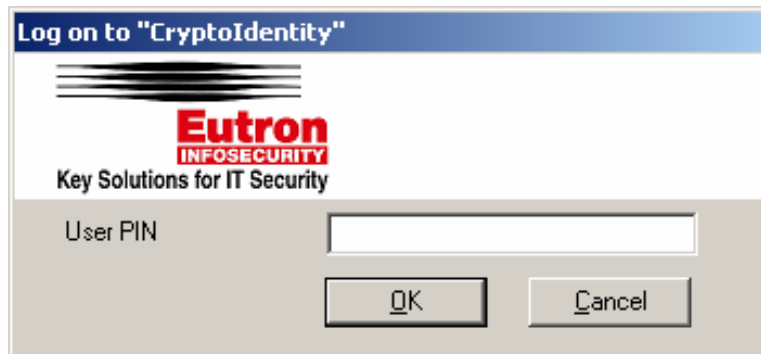
To **digitally sign** the e-mails:

- Configure the Microsoft Outlook 2000 account as explained in the section "5.1.2.1 Microsoft Outlook 2000 configurations".
- Require a personal certificate for the account used and store it into Cryptoidentity token. Refer to section "4.1 Storing certificates into Cryptoidentity " for detailed instructions.
- Plug the Cryptoidentity containing the digital credentials used for digital signatures into a free USB port.
- Create a new message (select **New->Mail Message** from the main menu)
- Click the **Options** button
- In the **Message Options** windows, mark the **Add digital signature to outgoing message** option.

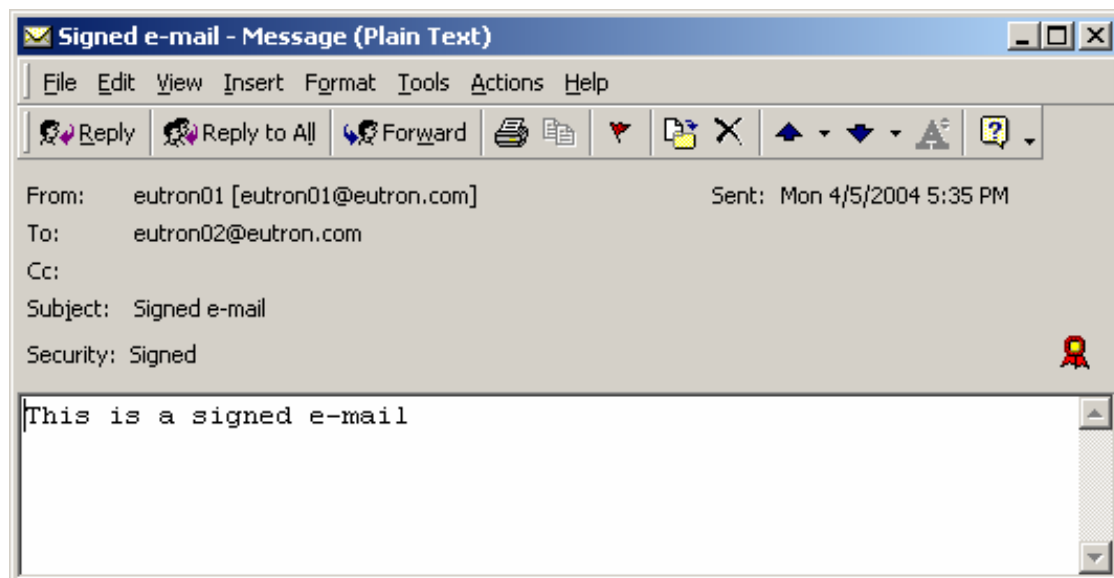


Cryptoidentity User Guide – 5. Working with Cryptoidentity and Applications

- Click **Close** to confirm the new settings.
- In the message window, fill in the recipient e-mail address and the subject fields and compose the message as usually. Then click **Send**.
- Microsoft Outlook2000 automatically signs the e-mail using the digital certificate stored into the Cryptoidentity. The Cryptoidentity PIN is required before the signed e-mail is sent:



- Wait while the e-mail is digitally signed.
- From the **Sent Items** list, open the e-mail that has just been sent. It appears with a red ribbon. This means it has been digitally signed:



To **encrypt** the e-mails:

- Obtain the digital certificates of the recipients for which you want to encrypt the e-mails. Each certificate must be added into the Microsoft Outlook 2000 address book.



Once a digital certificate is contained into the personal address book and it is properly associated to a contact, it is possible to send encrypted e-mails to the contact.

- There are two ways to obtain the digital credentials of a recipient and store them into the address book:

- By mailing or transferring on diskette the certificate file. Ask the recipient to provide his digital credentials included in a file, and then import then into the address book.

-In the Contacts address book, find out the recipient (if it does not exist, create a new contact).

-Open the contact and click the **Digital Ids** tab

-Select the e-mail address to link the certificate from the **Select an e-mail address** drop-down list.

-Click **Import**.

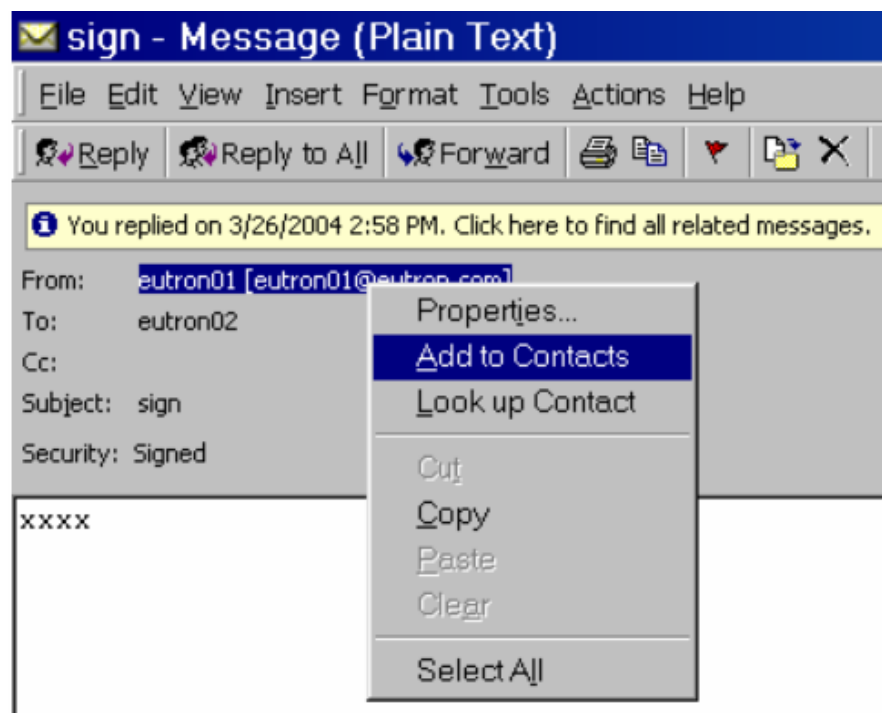
-Browse for the certificate file to import.

-Click **Open**.

-If the e-mail address within the certificate does not match the e-mail address of the contact, an error message is displayed.

- By receiving a signed e-mail from the recipient. Signing an e-mail usually appends the digital certificate to the e-mail message.

-Open the signed e-mail and right click the mouse button on the sender. Select **Add to Contacts** to add a contact including the certificate into the address book.



- Create a new message (select **New->Mail Message** from the main window).

Cryptoidentity User Guide – 5. Working with Cryptoidentity and Applications

- In the **Message Options** windows, mark the **Encrypt message contents and attachments** option.

The **Message Options** dialog box is shown with the following settings:

- Message settings:**
 - Importance: Normal
 - Sensitivity: Normal
- Security:**
 - ☒ Encrypt message contents and attachments
 - ☒ Add digital signature to outgoing message
- Delivery options:**
 - ☐ Have replies sent to: [Empty field] **Select Names...**
 - ☒ Save sent message to: Sent Items **Browse...**
 - ☐ Do not deliver before: [Empty field]
 - ☐ Expires after: [Empty field]
 - Send message using: eutron01
- Tracking options:**
 - ☒ Request a read receipt for this message
- Buttons:** Contacts..., Categories..., Close

- Click **Close** to confirm the new settings.
- In the message window, press **To:->** and select a recipient from the list. The recipients that have associated a Digital ID can be identified by a red ribbon in the address book:

The **Select Recipients** dialog box is shown with the following settings:

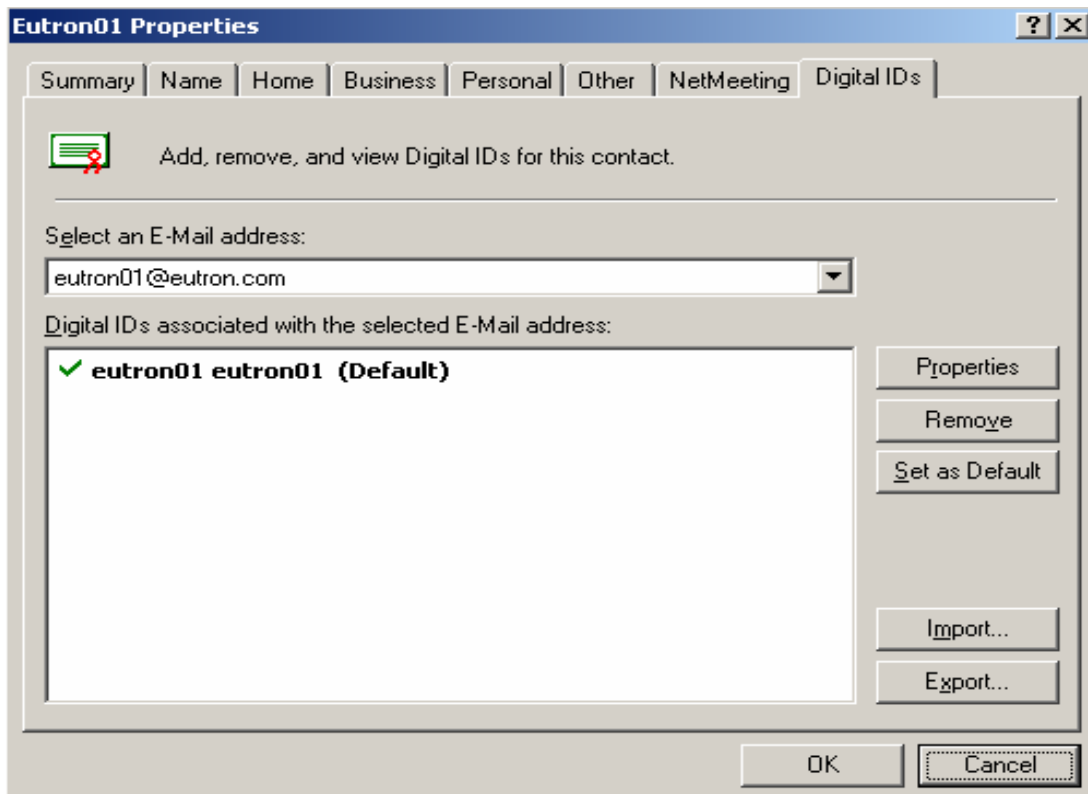
- Type name or select from list:** [Empty field] **Find...**
- Main Identity's Contacts:** [Dropdown menu]
- Message recipients:**
 - To: ->** [Empty field]
 - Cc: ->** [Empty field]
 - Bcc: ->** [Empty field]
- Buttons:** New Contact, Properties, OK, Cancel

The contact list shows:

Name	E-Mail Address
Eutron01	eutron01

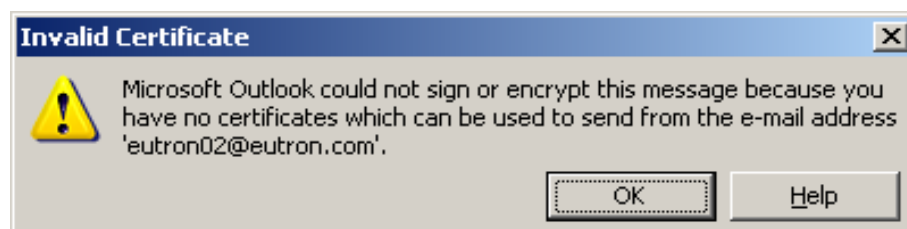
Cryptoidentity User Guide – 5. Working with Cryptoidentity and Applications

- Double click the recipient or click **To: ->**.
- Click **OK** to add the recipient to the new e-mail message.
- To make sure that the contact has associated a digital certificate, right click on the recipient in the **To->** field and select **Properties**.
- Click the **Digital IDs** tab. The certificate associated to the contact is showed:



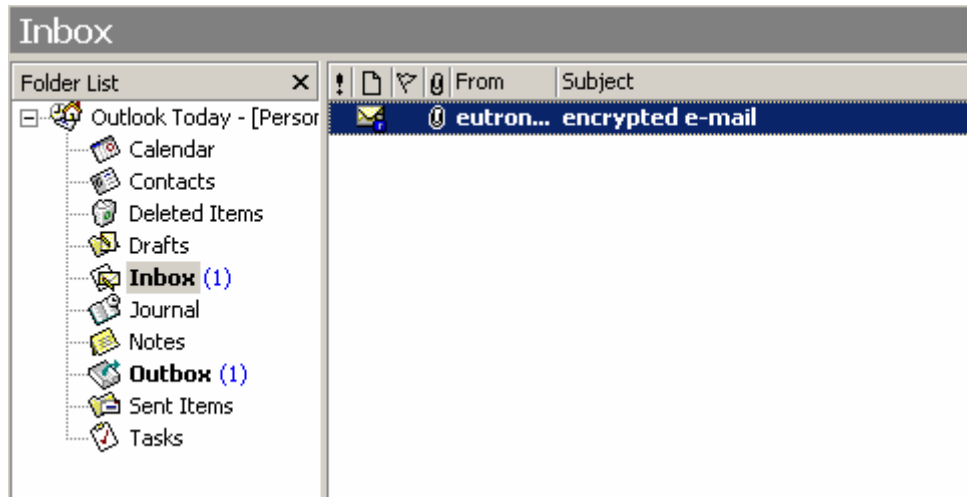
- Click **Send** to send the encrypted e-mail to the recipient.

If no Cryptoidentity containing the sender digital credentials is plugged into an USB port, a message appears to advise that it is impossible to encrypt the email. This because Microsoft Outlook 2000 needs both the sender and the recipient digital credentials to perform the encryption.



To open an encrypted e-mail:

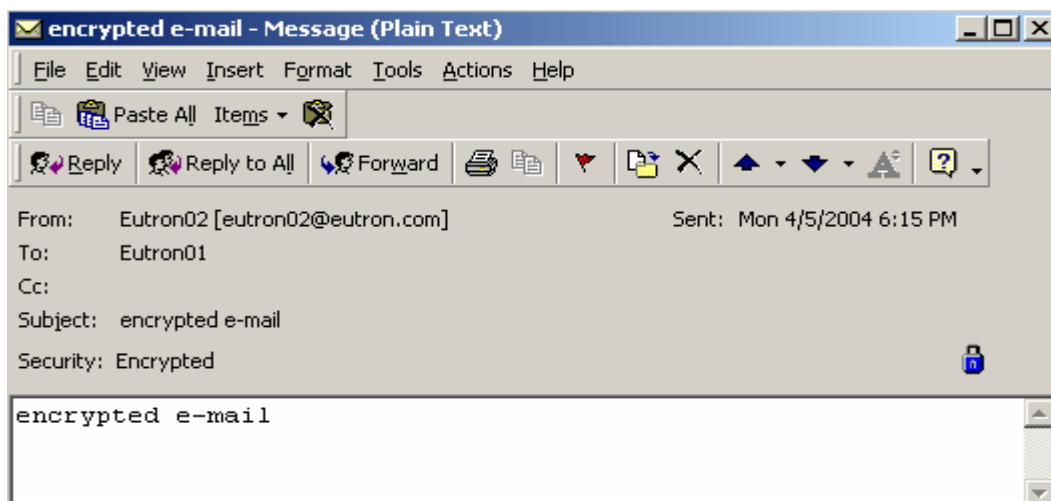
- Plug the Cryptoidentity containing the valid digital credentials to decrypt the message.
- Click on an encrypted e-mail to open it. The encrypted e-mails are recognized by a blue padlock:



- To decrypt and open the email, the Cryptoidentity PIN is required. Insert it to proceed:

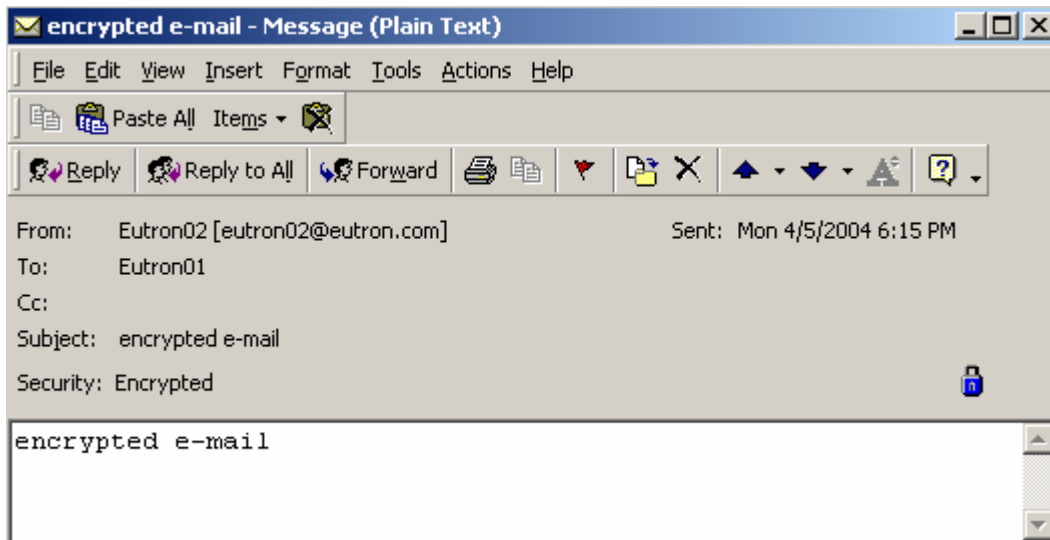


- A preview reminds that the message was encrypted. Click **Continue**:
- The e-mail is automatically decrypted using the digital credentials stored into the Cryptoidentity token:



Cryptoidentity User Guide – 5. Working with Cryptoidentity and Applications

Trying to open an encrypted e-mail without inserting the Cryptoidentity where the proper digital credentials are stored, an error appears:



Microsoft Outlook 2000 does not allow to reply Encrypted to a Signed e-mail. To do that you need to create a new Encrypted e-mail addressed to that specific contact.

5.1.3 NETSCAPE MESSENGER 4.7

Next sections explain the detailed instructions to configure Netscape Messenger 4.7 to send/receive secure e-mails using the Cryptoidentity token.

5.1.3.1 NETSCAPE MESSENGER 4.7 CONFIGURATIONS

To enable secure e-mails with Netscape Messenger 4.7 follow these steps:

- Obtain a digital certificate and store it into Cryptoidentity. Refer to section "4.1 Storing certificates into Cryptoidentity" for detailed instructions.

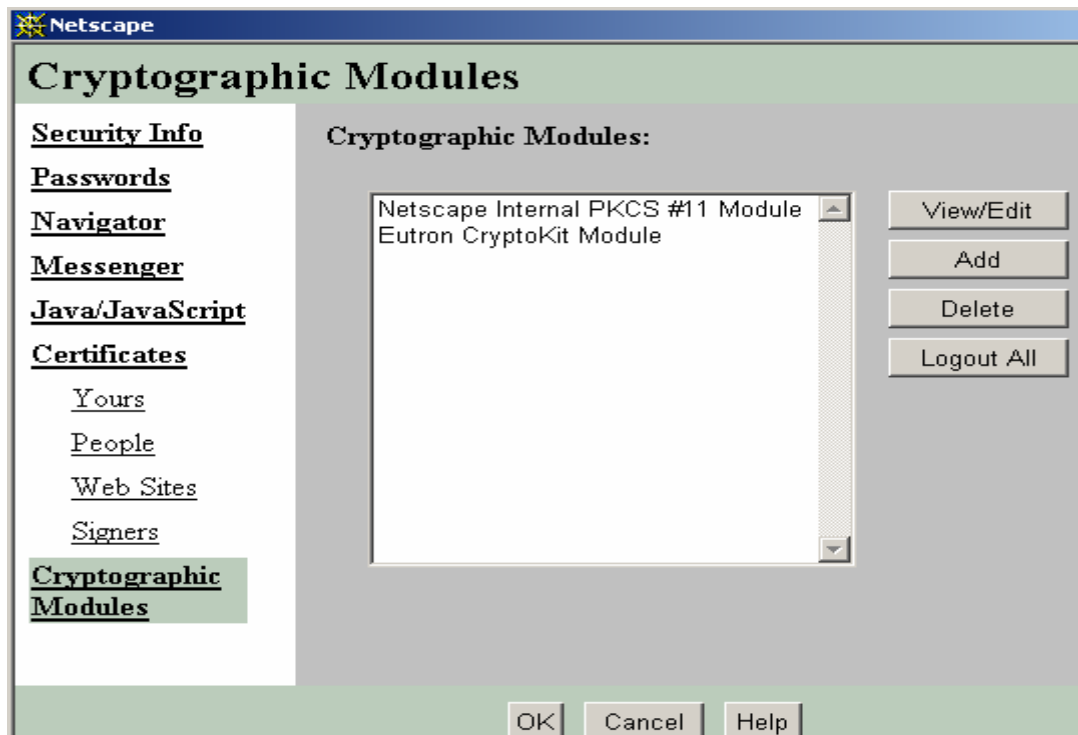


The digital certificate must be issued to the Identity (e-mail address) to be used for secure e-mails.

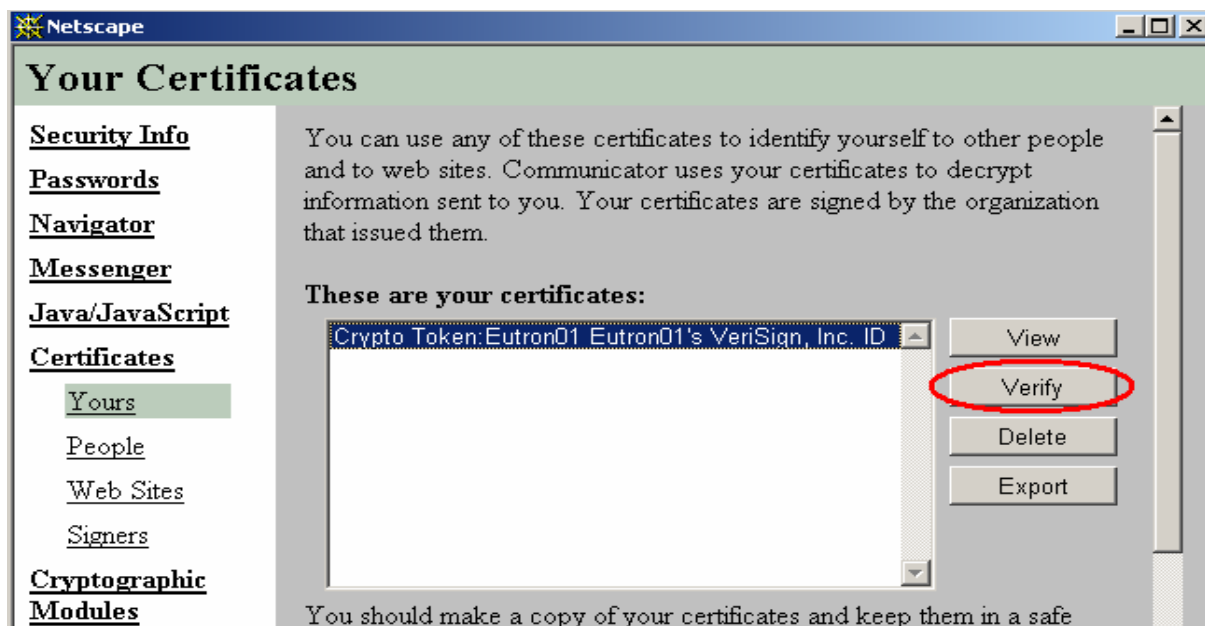
- Plug the Cryptoidentity containing the digital credentials into an USB port.
- Open Netscape Messenger and check if the CryptoKit security module is properly installed. To check it, select the menu **Communicator->Tools->Security Info**.
- The Cryptoidentity PIN might be required to access the Security Info panel. Insert it to proceed.

Cryptoidentity User Guide – 5. Working with Cryptoidentity and Applications

- In the Security Info Panel, open the **Cryptographic modules** section and verify if the CryptoKit module is present:

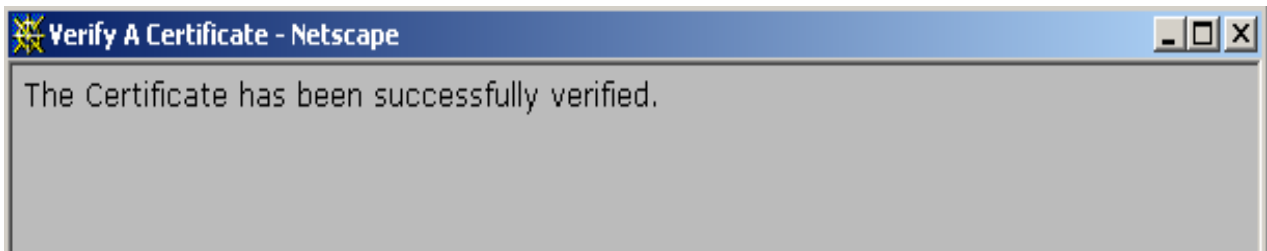


- If the CryptoKit security module is not installed, it is possible to add it by installing or maintaining the CryptoKit. When selecting the CryptoKit components to install, select the **"Netscape"** option. The CryptoKit security module will be automatically installed. For details refer to sections *"2.1 Installing CryptoKit"* and *"2.1.2 Maintaining CryptoKit"*.
- Check if the certificate stored into Cryptoidentity is properly recognized by Netscape Messenger. To do so, select the **Certificate->Yours** section. The list of the available certificates appears.
- Highlight the certificate and verify if it is available for digital signatures. To do so, click the **Verify** button located in the right side of the window.



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- If the certificate and related Certificate Signer's Certificate (which is the certificate of the Certification Authority who issued it) are available, this message appears:



- If the certificate stored into Cryptoidentity or the related Certificate Signer are not available, an error appears.



Using Netscape Messenger 4.7 it is possible to digitally sign the e-mails only on the machine where the certificate was issued, or on other machines where the Certificate Signer's Certificate is already present. To check if the Certificate Signer's Certificate is present, open the Certificate->Signers section in the Security Info Panel.

For further details, consult the Netscape Messenger help.

Configure Netscape Messenger following these steps:

- Run Netscape Messenger and select the **Edit->Preferences** menu.
- Select the **Identity** section. Fill the **Your Name**, **E-Mail address** and **Reply-to-address fields** with the proper values.
-

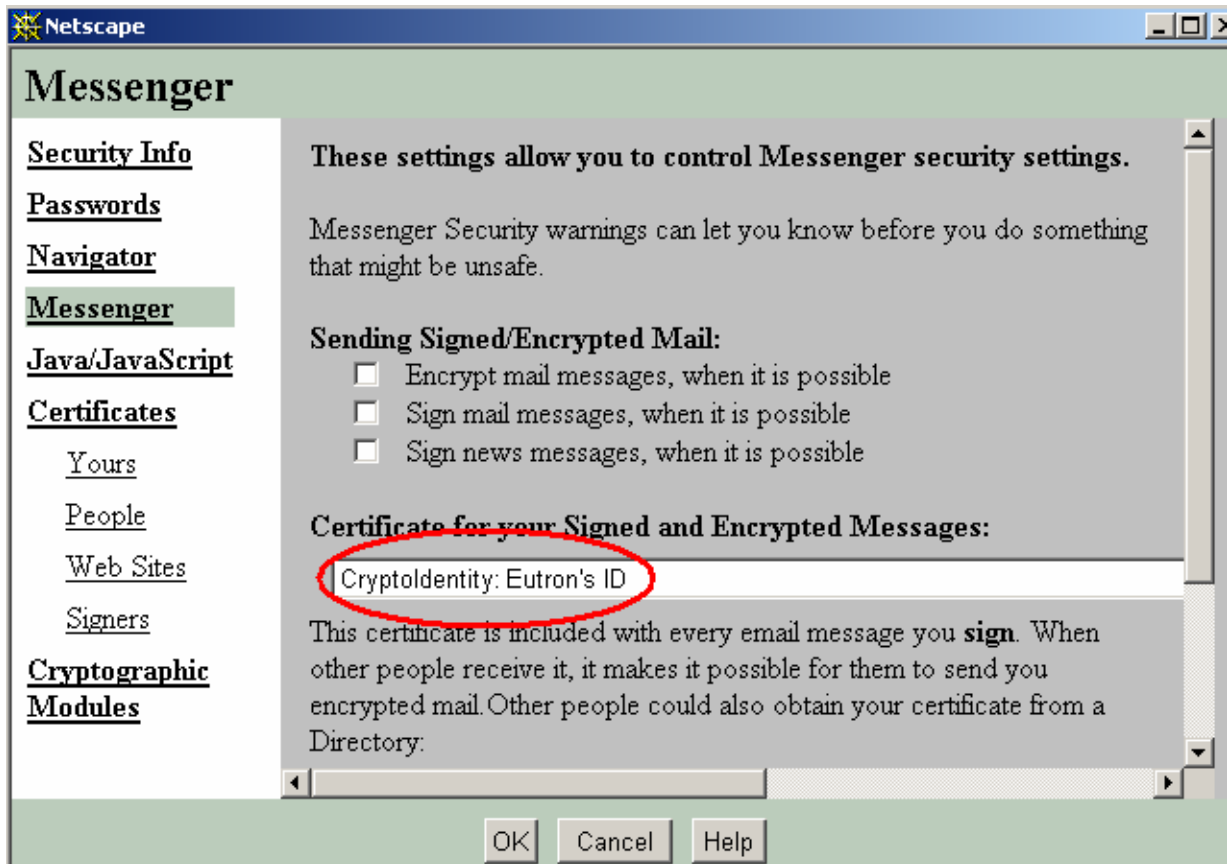


Make sure to fill the "Your Name" and "Reply to..." fields with the e-mail address for which the certificate has been issued.

- Select the **Server** section and complete the Identity configurations.
- Click **OK** to commit the new settings.

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- Select the menu **Communicator->Tools->Security Info** and open the **Messenger** section. Select the digital certificate stored into Cryptoidentity to be used to digitally sign the e-mails:



- Click **OK** to confirm the new settings.



More information is available in the Netscape Messenger Help. Open it and view the "Security" topic.

5.1.3.2 SECURE EMAIL-S WITH NETSCAPE MESSENGER 4.7

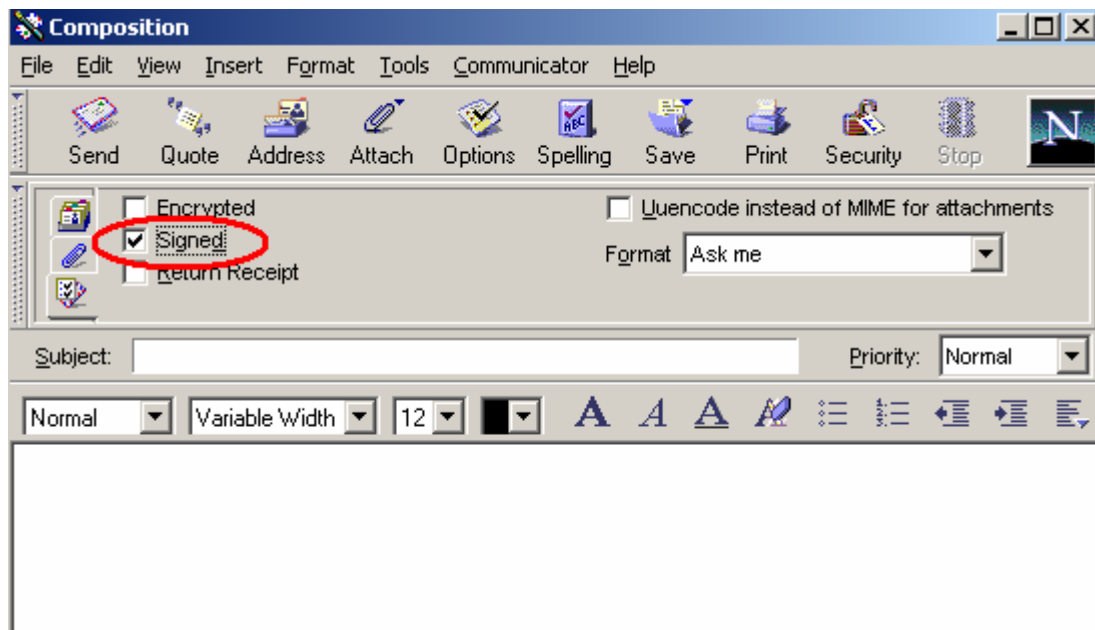
In order to send/receive secure e-mails with Netscape Messenger, follow carefully the instructions below.

To **digitally sign** the e-mails:

- Configure the Netscape Messenger Identity as explained in the section "5.1.3.1 Netscape Messenger 4.7 configurations".

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- Require a personal certificate for the Identity used and store it into Cryptoidentity token. Refer to section "4.1 Storing certificates into Cryptoidentity" for detailed instructions.
- Plug the Cryptoidentity containing the digital credentials used for digital sign into a free USB port.
- Create a new message (select **New Msg** from the main windows)
- In the **Composition** Window, press the **Options** button and select the **Signed** option:



- Fill in the recipient e-mail address and the subject fields and compose the message as usual. Then click **Send**.
- Netscape Messenger automatically signs the e-mail through the digital credentials stored into the Cryptoidentity.
- Open the **Sent Items** list, the e-mail appears including the **Signed** mark. This means it has been digitally signed:



- Click the **Signed** symbol to get information about the digital signature.

To **encrypt** the e-mails:

- Obtain the digital credentials of the recipients for which you want to encrypt the e-mails. Each certificate must be added into the Netscape Messenger **Other People's Certificates** panel. To open the Other People's Certificates panel, Open the **Security Info->Certificates->People** section.



Once a digital certificate is contained into the Other People's Certificates panel, it is possible to send encrypted e-mails addressed to the certificate owner.

- There are two ways to obtain the digital credentials of a recipient and store them into the Other People's Certificates panel:

- By using **Network Directory**.

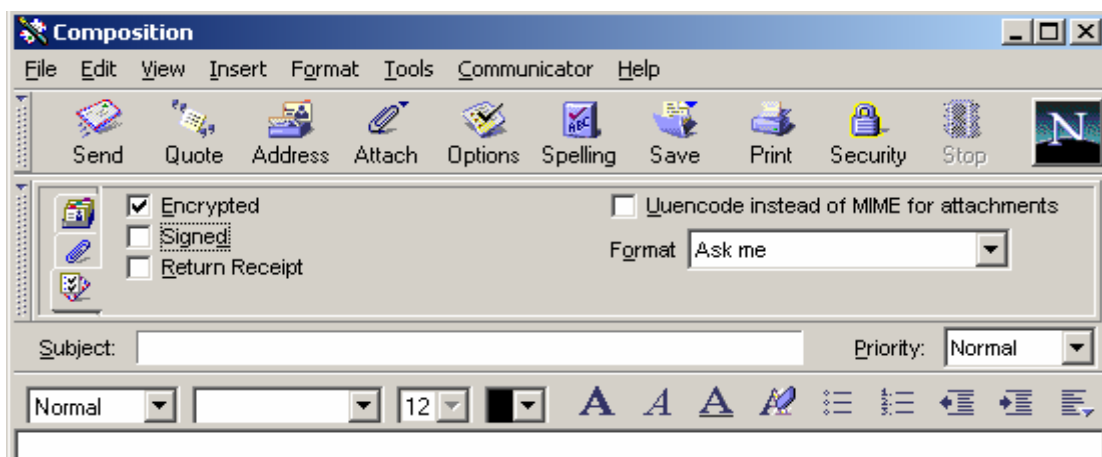
-To import a certificate of other people from Network Directory click on **Security info-> Other People's Certificates->Search Directory** button. From the Network Directory it is possible to obtain the digital certificates of people who has sent them to the directory.

-To send a certificate to the Network Directory, in order to make it available to other people for encryption, click on **Security Info->Messenger->Send Certificate to Directory** button. To learn more about Network Directory refer to Netscape Messenger Help.

- By receiving a signed e-mail from the recipient. Signing an e-mail usually appends the digital certificate to the e-mail message.

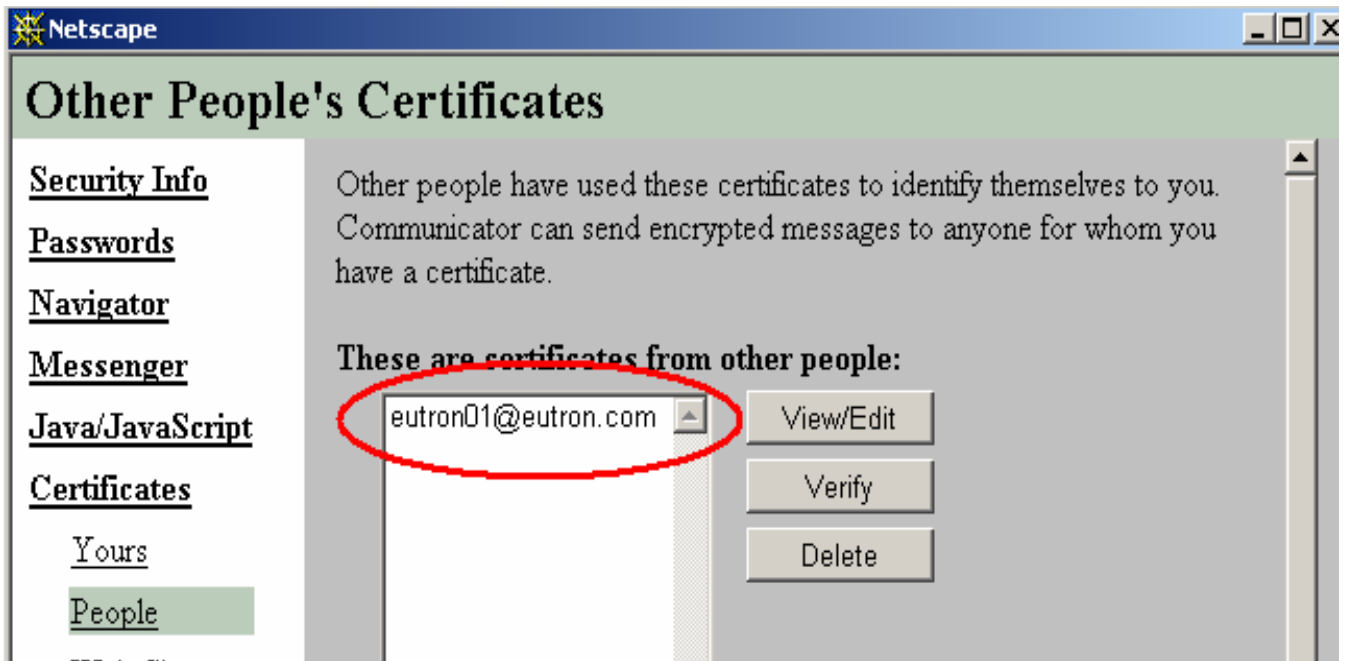
-When a digitally signed e-mail is received and opened through Netscape Messenger, the digital credentials are **automatically added** into the **Other People's Certificates** panel.

- Create a new message (select **New Msg** from the main menu)
- In the **Composition** window, click the **Options** button and select the **Encrypted** option:



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- Fill in the recipient e-mail address and the subject fields and compose the message as usually.
- Make sure that the recipient digital credentials are available to perform the encryption. To do this, click the **Security** button and open the **Certificates->People** section. Check the **Other People's Certificates** list to verify if the recipient certificate to be used for encryption is present :



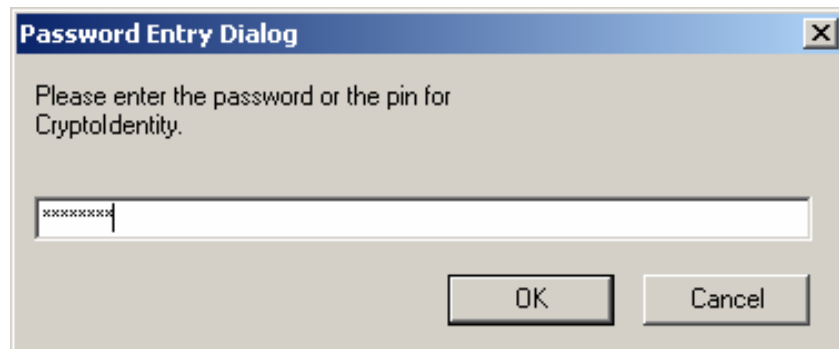
- Close the Other People's Certificate panel.
- Click **Send** to send the encrypted e-mail to the recipient.

If no Cryptoidentity containing the sender digital credentials are plugged into an USB port, a message appears to advise that it is impossible to encrypt the email. This because Netscape Messenger needs both the sender and the recipient digital credentials to perform the encryption.

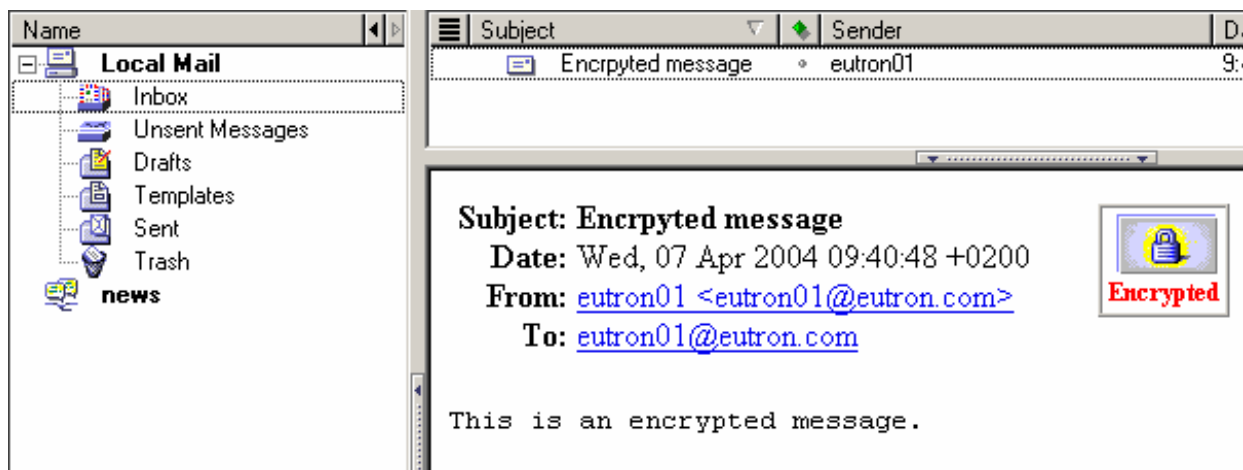


To open an encrypted e-mail:

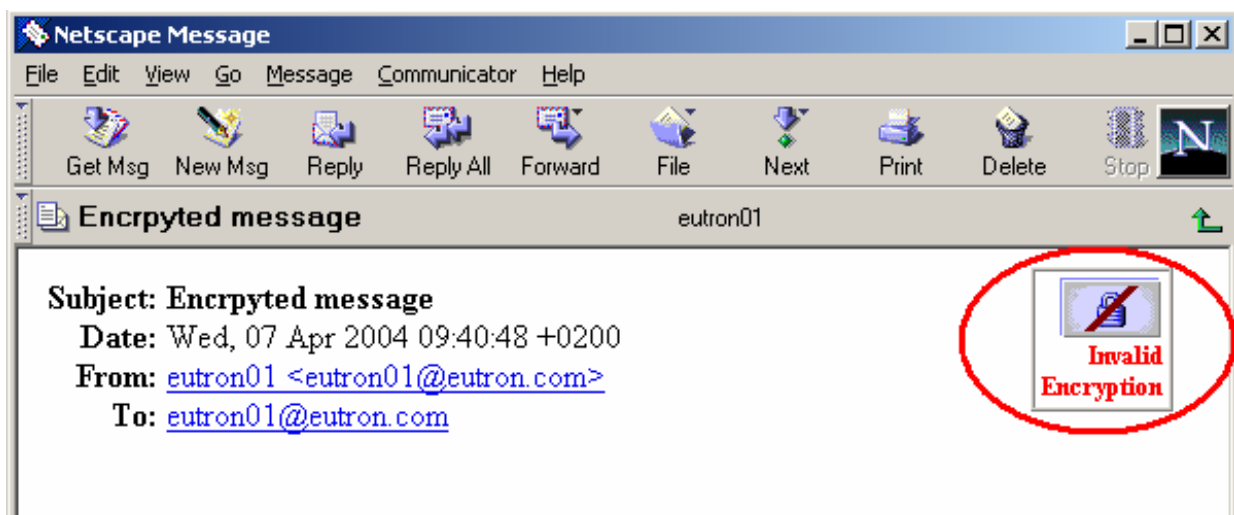
- Plug the Cryptoidentity containing the valid digital credentials to decrypt the message.
- Click on an encrypted e-mail to open it. The Cryptoidentity PIN is required. Insert it to proceed:



- The e-mail is automatically decrypted using the digital credentials stored into the Cryptoidentity token. It is marked with the **Encrypted** icon:



Trying to open an encrypted e-mail without inserting the Cryptoidentity where the proper digital credentials are stored, an error appears:



5. 2 MICROSOFT VPN

To authenticate to a Microsoft VPN using digital credentials stored into a Cryptoidentity token, please refer to the "Microsoft VPN PPTP with CryptoKit" guide (file "CK_VPN_PPTP.pdf") located in the "<CRYPTOKIT INSTALL DIR>\doc" folder.

5. 3 MICROSOFT SMARTCARD LOGON

To authenticate to a LAN through Microsoft Smartcard logon and Cryptoidentity, please refer to the "Cryptoidentity for Windows 2000/XP Token Logon" guide (file "CryptoidentityLogon.pdf") located in the "<CRYPTOKIT INSTALL DIR>\doc" folder.

5. 4 PKI PRODUCTS

Cryptoidentity support several PKI infrastructures. Next section explains the instructions to configure Entrust.



For other PKIs, please send an e-mail to helpdesk@eutron.com to obtain help for configurations.

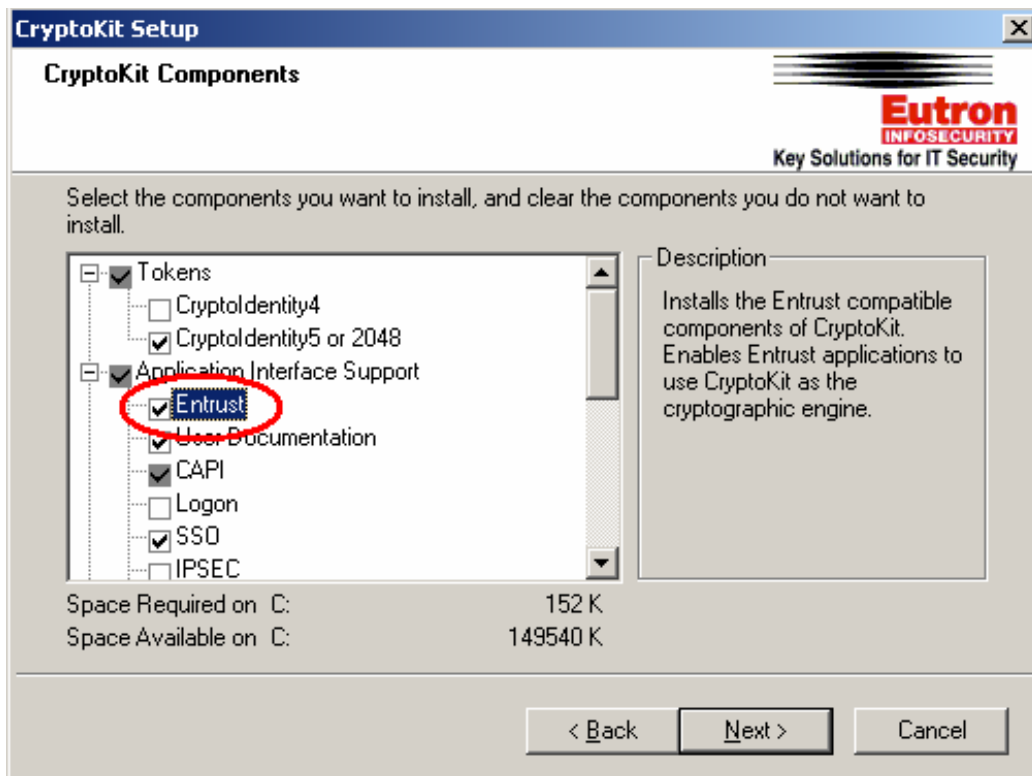
5. 4. 1 ENTRUST

To allow Entrust to take advantage of the Cryptoidentity functionalities, follow carefully the following instructions.

- Install the Entrust client on the machine and choose to NOT create a new profile.
- Reboot the machine and enter Windows.
- Search on your hard-drive the "entrust.ini" file. It includes the Entrust parameters. Edit it, and set the **[FIPS MODE]->FipsMode** parameter to 0:

```
[FIPS Mode]
FipsMode=0
etadmapiAuth=DES-MAC,64,603BDC13C5DA9
```

- Install CryptoKit. If CryptoKit was already installed, it is possible to maintain it. During CryptoKit setup, choose the "Entrust" option in the components to install:



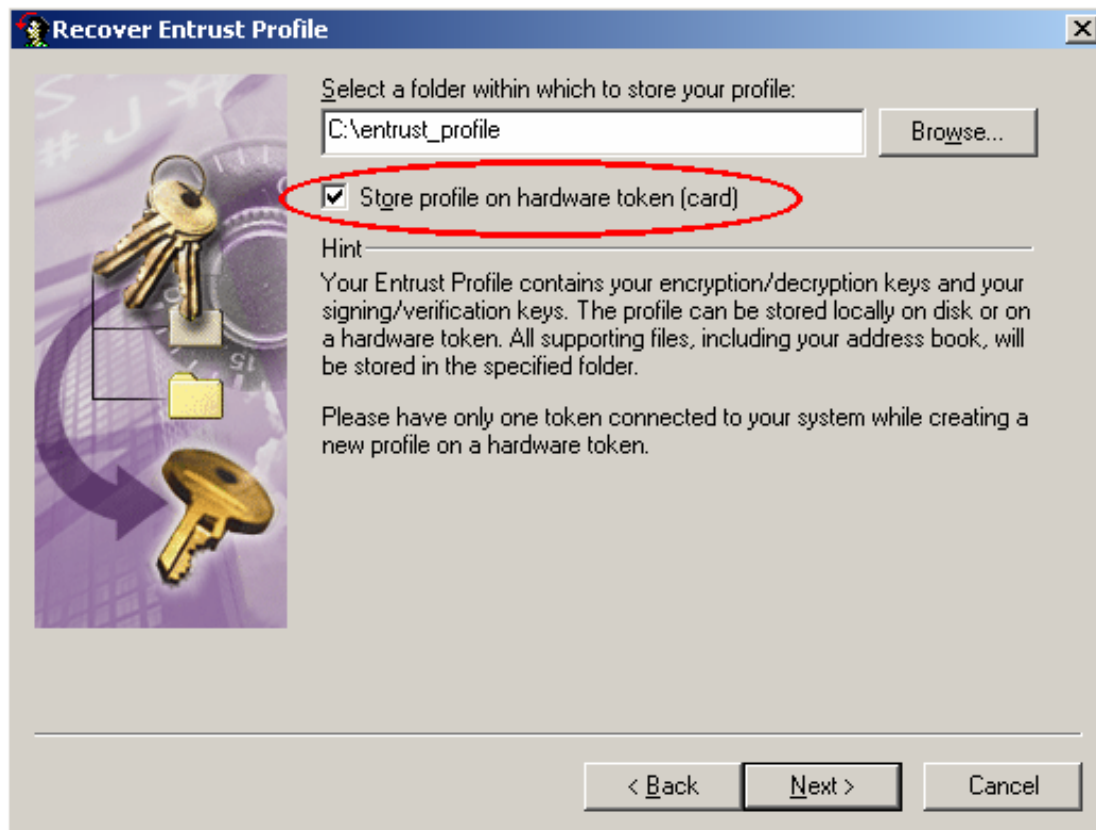
- Entrust will be automatically adjusted to work with Cryptoidentity. For details regarding the CryptoKit installation refer to sections "2.1 Installing CryptoKit" and "2.1.2 Maintaining CryptoKit".
- The process could takes some minutes:



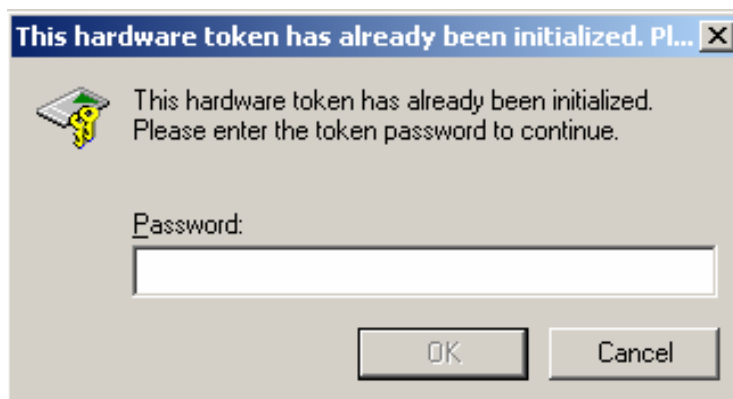
- At the end, reboot the machine
- Log in to Windows.
- Insert a Cryptoidentity into a free USB port.
- It is now possible to **Create** or **Recover** an Entrust profile and to store it into the Cryptoidentity.
- Start the procedure to Create or Recover an Entrust Profile from the Entrust client.
- Insert the Reference Number and the Authorization code released from the Entrust Ca, and click **Next**.

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- When requested, select the **Store profile on hardware token (card)** option. Selecting it, the profile will be stored into Cryptoidentity.



- Insert a Profile name, and click **Next** in the next windows to start the profile creation/recover. The Cryptoidentity PIN is required, insert it to proceed:



- Wait while Entrust stores the profile into the Cryptoidentity token.
- At the end of the process, it will be possible to use the profile stored into Cryptoidentity to perform the Entrust features (Login, sign, encrypt, etc.)

6. DEVELOPING APPLICATIONS INTEGRATED WITH CRYPTOIDENTITY

The Microsoft CAPI and PKCS#11 standard allow to create an application that takes advantage of the Cryptoidentity cryptographic functions.

More information is available in the "AR CryptoKit Developer's Guide ver 3.6" (file " Ckit_360.pdf ").

The next sections introduce the PKCS#11 standard and Microsoft CAPI.

6.1 MICROSOFT CAPI

The Microsoft Cryptographic Application Programming Interface (CAPI) standard supports the development of applications that include functions such as secure certificate, key and data storage, authentication, encryption, signature and verification.

The benefits of using CryptoAPI are significant because the developer can take advantage of the cryptographic features integrated into the Windows platform without having to know cryptography or how a particular cryptographic algorithm works. For example, a properly programmed USB token CSP would use an existing CSP (such as Microsoft Base Provider) to perform all public- and symmetric-key operations and use the token itself to perform all private-key operations.

CAPI is used for certificate and key management by Microsoft products, such as Internet Explorer, Outlook and Outlook Express.

Cryptoidentity fully supports the Microsoft CAPI standard.

Visual Basic programmers should consult Microsoft MSDN and search for **CAPICOM**. CAPICOM is a COM client that performs cryptographic functions using Microsoft ActiveX and COM objects.

Here is a brief excerpt from MS documentation:

"CAPICOM is a Microsoft® ActiveX® control that provides a COM interface to Microsoft CryptoAPI. It exposes a select set of CryptoAPI functions to enable application developers to easily incorporate digital signing and encryption functionality into their applications. Because it uses COM, application developers can access this functionality in a number of programming environments such as Microsoft® Visual Basic®, Visual Basic Script, Active Server Pages, Microsoft® JScript®, C++, and others. CAPICOM is packaged as an ActiveX control, allowing Web developers to utilize it in Web based applications as well."

More information is available at:

www.microsoft.com/security/default.asp

<http://msdn.microsoft.com/library/en-us/dnsecure/html/intcapicom.asp>

6. 2 PKCS#11 STANDARD

The PKCS#11 (or Cryptoki) standard specifies an application programming interface (API) for devices such as Cryptoidentity, which hold cryptographic information and may perform cryptographic functions.

Cryptoki, pronounced crypto-key and short for cryptographic token interface, follows a simple object-based approach, addressing the goals of technology independence (any kind of device) and resource sharing (multiple applications accessing multiple devices), presenting to applications a common, logical view of the device called a cryptographic token.

Applications based on PKCS #11 include Netscape, Baltimore UniCERT Token Manager, and Entrust/PKI.

The reference documentation for the PKCS#11 API is available at:

<http://www.rsasecurity.com/rsalabs/pkcs/pkcs-11/>

To adopt PKCS#11 for integrating Cryptoidentity into an application, it is strongly suggested to download and study carefully the PKCS#11 standard.



Several examples regarding PKCS#11 and Cryptoidentity can be found in the "Samples" subfolder located into the CryptoKit installation folder.

7. FREQUENTLY ASKED QUESTIONS AND TROUBLESHOOTING

This chapter provides Cryptoidentity general troubleshooting and FAQ.



To access the updated Cryptoidentity FAQ section you can visit
: <http://www.eutroninfosecurity.com/pub/CryptoIdentity/FAQ>

1. *I have lost the Cryptoidentity PIN, or the Cryptoidentity PIN is locked. What can I do?*

The solution is to re-initialize the Cryptoidentity, in order to set a new PIN. It is possible to initialize Cryptoidentity through the **Init Token** or **ARGenie** utilities. The Cryptoidentity **Security Officer PIN** is required for the initialization process. Refer to sections "3.3 *Init Token*" and "3.1 *ARGenie*" for detailed instructions.



The initialization process erases all certificates, digital credentials and cryptographic keys stored into Cryptoidentity.

2. *I have lost the Cryptoidentity Security Officer PIN, or the Cryptoidentity Security Officer PIN is locked. What can I do?*

For security reasons, it is not possible to restore or change the Security Officer PIN if the current Security Officer PIN is lost or locked. It will not be possible to perform on the token operations for which the Security Officer PIN is required (for example, the initialization process).

Viceversa, you will be able to use the Cryptoidentity to perform standard cryptographic operations for which the PIN is required (digital sign, encryption, certificates enroll, etc.).

3. *I can not use Cryptoidentity. I am not able to perform any cryptographic operation with it because a generic error appears.*

Make sure your Cryptoidentity is properly initialized. For example, try to obtain its serial number through the **Token Serial Number** utility or change its PIN through the **Password Change Utility** (refer to sections "3.5 *Token Serial Number*" and "3.2 *Password Change Utility*"). If errors appear during these tests, the token should be initialized. It is possible to initialize it through the **Init Token** or **ARGenie** utilities. Refer to sections "3.3 *Init Token*" and "3.1 *ARGenie*" for detailed instructions.

4. *Trying to Initialize the Cryptoidentity through Init Token or ARGenie utility, an error like the following appears:*



Probably, there is an active process which accesses the Cryptoidentity, and this causes the problem. For example, if the Microsoft Smartcard logon mechanism is enabled, the Cryptoidentity is not available for the initialization because already in use by Smartcard logon related processes.

To solve the problem, you may try to unplug the Cryptoidentity and re-plug it into the USB port. This should close automatically all the sessions opened by applications accessing Cryptoidentity. Then, you can try to start a new Initialization process.

5. *I want to delete a certificate or an object stored into Cryptoidentity. How can I do it?*

First, import a value into the Windows registry. To do so, access the "Utils\Advanced" subfolder located in the CryptoKit installation folder and import the "arGenieParams(xx).reg". Then run the ARGenie utility in "advanced" mode (for instructions refer to section "3.1 ArGenie"). Access the Cryptoidentity objects list, right-click on an object and select the "Delete" option.



Make sure to NOT delete an object or keys used to perform cryptographic operations. For example, if data were encrypted using a deleted key stored into the Cryptoidentity USB token, it will NOT be possible to decrypt that data anymore. Please DO NOT delete an object unless you really know it needs to be deleted.



The importing of the registry value must be repeated for each user that want to delete objects on the Cryptoidentity. Logon to Windows with the credentials of each user for which to enable the deleting of objects and import the " arGenieParams(xx).reg" file .

6. *I have lost the Security Officer PIN, then I can not initialize the Cryptoidentity anymore. But I want to delete certificates and object stored into Cryptoidentity. How can I proceed?*

See the previous FAQ (number 5). The Security Officer PIN is not required.

7. *I want to export a digital certificate from Cryptoidentity. How do I do it?*

The digital certificate's private key must be set to "exportable" during the key generation. If the key is exportable, access the System Store Certificates by right-clicking the Internet Explorer icon on the computer's desktop, then select Properties->Content->Certificates

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button. You can export the certificate stored into Cryptoidentity in the same way you export a certificate stored into the System Store.

An example of how to export a certificate from the System Store is described in section "4.3.1 How to backup digital credentials" (start from the "Select the certificate and press the Export button.." step).

8. *I have installed an application which supports Microsoft CAPI or PKCS#11 to work with cryptographic devices. How can I enable it to work with Cryptoidentity?*

If the application supports Microsoft CryptoAPI, define "AR Base Cryptographic Provider" as "CSP" in the application settings.

If the application supports the PKCS#11 standard, define "sadaptor.dll" as the PKCS#11 library in the application settings.

9. *I have installed an application (running on a CITRIX server) which supports Microsoft CAPI or PKCS#11 to work with cryptographic devices. How can I enable it to work with Cryptoidentity?*

CryptoKit components must be installed on the Citrix server. On each client who runs the application, install only the Cryptoidentity drivers. Then, on the CITRIX server configure the application to work with Cryptoidentity (see FAQ number 8).

To install only the Cryptoidentity drivers, download the setup from:

<http://www.eutroninfosecurity.com/pub/CryptoIdentity/1.0.9.1/>

10. *Is it possible to enable Smartcard Logon through Cryptoidentity on a Citrix server?*

This feature has been added starting from 3.7 CryptoKit release.

11. *I have installed an application (running on a Terminal server machine) which supports Microsoft CAPI or PKCS#11 to work with cryptographic devices. How can I enable it to work with Cryptoidentity?*

It is possible to configure it only if Terminal Server services are running on a Windows 2003 server machine. The client machines must have installed W2K, XP or 2003.

CryptoKit components must be installed on the Windows 2003 Terminal Server machine. On each client (W2K/XP/2003) who runs the application, install only the Cryptoidentity drivers. Then, on the Win 2003 Terminal Server machine configure the application to work with Cryptoidentity (see FAQ number 8).

To install only the Cryptoidentity drivers, download the setup from:

<http://www.eutroninfosecurity.com/pub/CryptoIdentity/1.0.9.1/>

12. Is it possible to enable Smartcard Logon through Cryptoidentity on a Terminal Server machine?

Yes, it is possible if Terminal Server services are running on a Windows 2003 server machine. The client machines must have installed W2K, XP or 2003.

In any other case, it is not possible because the smartcard support is not provided by the operating system.

13. Is it possible to authenticate through Cryptoidentity on a Windows XP machine using Remote Desktop?

Yes, it is possible. CryptoKit components must be installed on the Windows XP machine that will be accessed through Remote Desktop. On each client who connects to the Win XP machine, installs only the Cryptoidentity drivers.

APPENDIX**EUTRON INFOSECURITY CUSTOMER SERVICE**

Eutron Infosecurity offers a free technical support.

If you need technical assistance, do not hesitate to contact **Eutron Infosecurity Customer Service** at:

e-mail: helpdesk@eutron.com

Telephone: +39 035697055 (14.00 - 17.00 CET, from Monday to Friday)

For other information, please contact:

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