DJIGZO EMAIL ENCRYPTION

DJIGZO S/MIME Setup Guide

May 29, 2012, Rev: 6513

Contents

1 Introduction

The first part of this guide will give a short introduction on S/MIME. The second part of this guide will briefly explain how to setup a DJIGZO gateway for S/MIME (for a more detailed guide on managing a DJIGZO gateway see the *DJIGZO Administration Guide*). The third part of this guide will explain how to setup S/MIME for some of the most popular email clients (like Outlook, Lotus Notes etc.).

2 S/MIME

S/MIME is a widely supported email encryption standard. S/MIME is natively supported by most common email clients like Outlook, Outlook express, Windows Mail, Lotus Notes, Thunderbird, Evolution, Apple Mail, BlackBerry etc. This section will give a brief introduction to S/MIME. S/MIME is based on *Public Key Infrastructure* (PKI) and uses X.509 certificates.

Note: this section is a direct copy of the S/MIME section of the *DJIGZO Administration Guide* and can be skipped if the section has already been read.

2.1 PKI

Public Key Infrastructure is a technology which can be used to securely exchange information over insecure networks using public key cryptography. PKI uses X.509 certificates to bind a public key to an identity. The main advantage of PKI is that there is no need to directly trust everyone involved because trust can be inferred. Roughly speaking there are two trust models in use today: hierarchical (via trusted CAs) or “Web Of Trust”.

With the hierarchical trust model, trust is inferred bottom-up. The root (the bottom) is blindly trusted (that makes it by definition a root) and all leaf nodes and branches (the end-user and intermediate certificates) are trusted because they are child’s of the trusted root (to be precise the intermediate certificates are issued by the root certificate). S/MIME uses a hierarchical trust model.

In a “Web of Trust” model, trust is inferred from trusted neighbors in a mesh like structure (a web). **For example:** *Alice* trusts *Bob* and *Ted* trusts *Alice* and therefore *Ted* now also trusts *Bob* (through *Allice*). The hierarchical model can be viewed as a “Web of Trust” model with additional constraints.

Because trust is inferred from other entities, it is possible to securely check whether one entity trusts another entity and that it is not possible to “spoof” any trust. Trust checking is done using *Public Key Cryptography*. An intermediate certificate is digitally signed by the issuer of the certificate using the issuers private key. With the public key of the issuer, it can be checked whether the certificate was really issued by the issuer. The public key together with some extra information forms an X.509 certificate.

2.2 X.509 certificate

A typical X.509 certificate contains the following elements (this is a non-exhaustive list):

- Public Key
- Subject
- Email address
- Issuer
- Serial Number
- Not Before
- Not After
- Key Usage
- Extended Key Usage

An X.509 certificate is digitally signed by the issuer of the certificate. By digitally signing the certificate, any changes done after signing will break the signature. Any changes to the certificate will therefore be noticed. A brief introduction of some of the main elements of an X.509 now follows.

Public Key The public key, like the name already implies, is the key that everyone is allowed to know. If a message must be encrypted, the public key of the recipient is used for encryption. The public key is used to verify a digital signature (the digital signature is created with the associated private key).

Subject The subject of a certificate contains the name of the “owner” and optionally an email address (or sometimes multiple email addresses).

Email address A certificate can contain multiple email addresses. X.509 certificates for S/MIME should normally contain the email address for which the certificate was issued.

Issuer The issuer contains the name of the issuer of this certificate (i.e., the issuer element should be equal to the subject of the issuer). If the subject of a certificate is equal to the issuer of a certificate the certificate is most likely a self-signed certificate. Root certificates are almost always self-signed.

Serial Number Every certificate should have a serial number. The serial number should be unique for the issuer (i.e., an issuer should use the serial number only once).

Not Before This is the date at which the certificate becomes valid. If the current date is before the *Not Before* date, the certificate is not yet valid.

Not After This is the date at which the certificate is no longer valid. If the current date is after the *Not After* date, the certificate is no longer valid.

Key Usage The public key of the certificate can be used for multiple purposes. Sometimes however the issuer of the certificate wants to restrict the key usage to only certain types. The following key usage types can be identified:

- digitalSignature
- nonRepudiation
- keyEncipherment
- dataEncipherment
- keyAgreement
- keyCertSign
- CRLSign
- encipherOnly
- decipherOnly

If the key usage is not specified it implies that the key may be used for all purposes. For S/MIME encryption, if a key usage is specified it should at least contain *keyEncipherment*. For S/MIME signing, if a key usage is specified it should at least contain *digitalSignature* or *nonRepudiation*.

Extended Key Usage The extended key usage, if specified, further specifies for what purposes the certificate has been issued. The following extended key usages can be identified:

- anyKeyUsage
- serverAuth
- clientAuth
- codeSigning
- emailProtection
- timeStamping
- OCSPSigning
- IPSecEndSystem
- IPSecUser
- IPSecTunnel
- smartcardLogin

If the extended key usage is not specified it implies that the key may be used for all purposes. For S/MIME, if an extended key usage is specified, it should at least contain *anyKeyUsage* or *emailProtection*.

Thumbprint The thumbprint is strictly speaking not part of an X.509 certificate. The thumbprint is the *cryptographic hash*[1] calculated over the bytes of the encoded certificate. The thumbprint uniquely identifies a certificate. The default algorithm used by DJIGZO for calculating the thumbprint is *SHA-512*.

2.3 Revocation checking

Sometimes it can happen that a certificate should no longer be used. For example because the *private key* has been compromised or an employee has left the company. Certificates can be revoked by putting the certificates on a "Certificate Revocation List" (CRL). A CRL is issued by a certificate authority (CA) and is periodically updated. A revoked certificate should no longer be used. When a CRL is not available or when the administrator would like to "black list" a specific certificate, the certificate can be added to the *Certificate Trust List* (CTL). For more info on CTL see the Certificate Trust List section in the *DJIGZO Administration Guide*.

3 Gateway S/MIME quick setup

DJIGZO supports S/MIME encryption and digital signatures. Both the sender and receiver require a certificate and private key. DJIGZO therefore has a built-in CA server that can be used to issue certificates and keys to internal and external users for free.

External users, without a DJIGZO gateway, can use any S/MIME capable email client to start sending en receiving encrypted email once the certificate has been installed. External and internal users however are not required to use the built-in CA. If an external recipient already possesses an S/MIME certificate, the certificate can be used instead.

What now follows is a quick-start-guide on setting up a DJIGZO gateway for S/MIME. It is assumed that the DJIGZO gateway is already setup and is capable of sending email.

3.1 Certificate Authority (CA)

The DJIGZO gateway contains a built-in CA server which can be used to create end-user certificates for internal and external users. This helps to quickly setup an S/MIME infrastructure without having to resort to external CAs for certificates and keys. Certificates and private keys can be securely transported to external recipients using a password encrypted certificate store (.pfx). The external recipients can use the certificate with any S/MIME capable email client like *Outlook*, *Outlook express*, *Lotus Notes* and start receiving and sending S/MIME encrypted email without having to install additional software.

A brief explanation of the CA functionality will now follow. This section can be skipped if a CA is already setup.

[1] See http://en.wikipedia.org/wiki/Cryptographic_hash_function for more info on cryptographic hash functions.

Note: the built-in CA has limited functionality. If support for multiple CA profiles, OCSP, CRLs for intermediate and root certificates is required a dedicated external CA should be used instead (for example EJBCA).

Creating new CA

A new CA can be created by clicking *Create new CA* on the CA page (*CA*→*Create new CA*). The *Create new CA* page will be opened (see figure 1).

With the following steps, a new CA can be created:

1. Set validity to 1825 days (5 years) and key length to 2048[2].
2. Leave the email field empty.
3. Set a common name that uniquely identifies your CA. The common name of the root must be different from the common name of the intermediate.
4. Select *make default CA*.
5. Set signature algorithm to *SHA1 With RSA*[3].
6. Click *Create* to create the new root and intermediate certificate.

3.2 Certificates for internal users

For every internal user an S/MIME certificate should be created. The domains for which email is received should be internal domains and should be set to allow encrypted S/MIME messages to be sent.

For every domain for which you receive email do the following:

1. Add the domain.
2. Set *Encrypt mode* to Allow[4].
3. Set the *Locality* property to *Internal*.
4. Set the S/MIME *Allow* property.

For every internal user (i.e., a user from an internal domain) do the following:

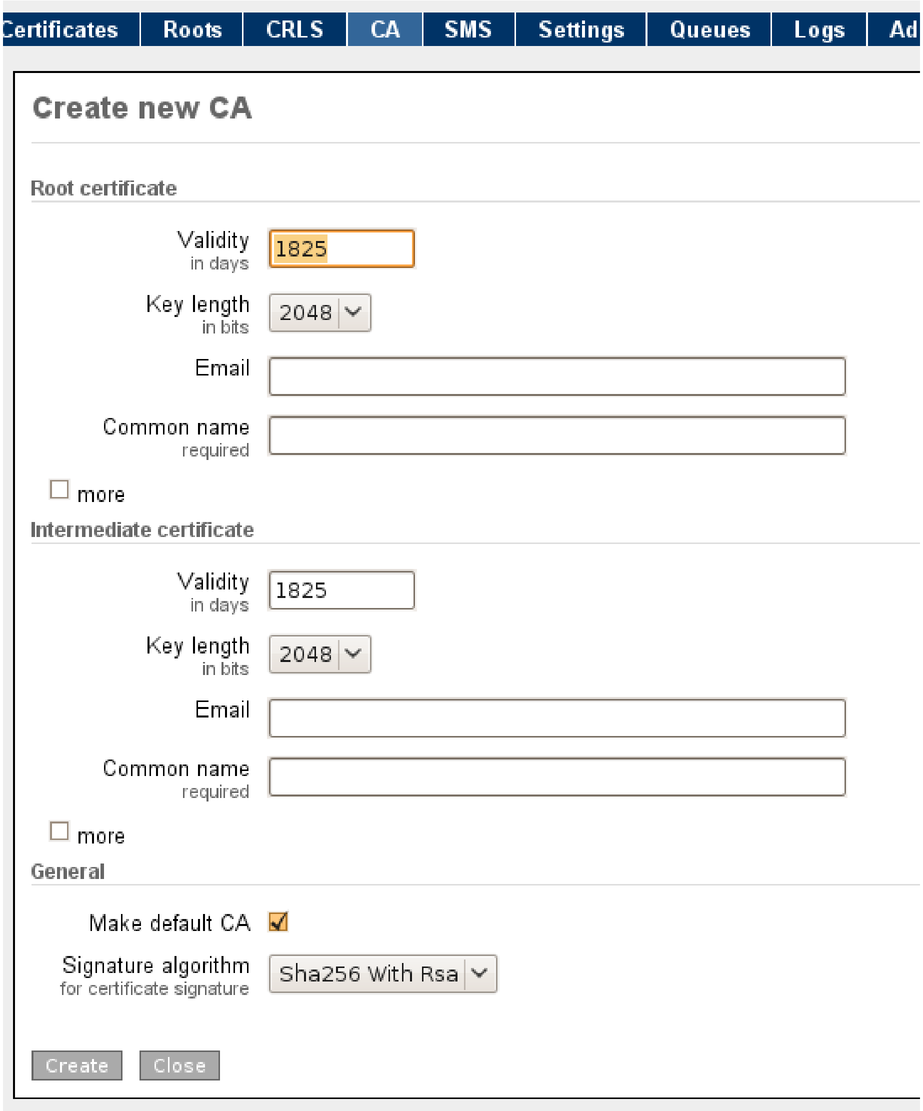
1. Create a new end-user certificate by clicking CA (this opens the *Create end-user certificate* page, see figure 2)
2. Set validity to 1825 days (5 years) and key length to 2048[5].

[2] 2048 is the best compromise between security and key length.

[3] Windows versions prior to *XP-sp3* do not support *SHA256 With RSA* or better. If older Windows versions should be supported, you are advised to use *SHA1 With RSA*. If support for older Windows versions is not required, you are advised to select *SHA256 With RSA*.

[4] Alternatively *No Encryption* can be used in combination with a *Subject trigger*.

[5] 2048 is the best compromise between security and key length.



Create new CA

Root certificate

Validity in days	1825
Key length in bits	2048
Email	
Common name required	

□ more

Intermediate certificate

Validity in days	1825
Key length in bits	2048
Email	
Common name required	

□ more

General

Make default CA	☑
Signature algorithm for certificate signature	Sha256 With Rsa

Figure 1: Create new CA

3. Set signature algorithm to *SHA1 With RSA*[6].
4. Set email to the email address of the internal user.
5. Set a common name to identify the user (for example use the first and last name of the user).
6. Click *Create* to create the certificate and private key for the user.

Note: For advanced settings like CRL distribution point see the *DJIGZO Administration Guide* for more information.

3.3 Certificates for external users

In order to send and receive S/MIME encrypted and digitally signed email, every external recipient should possess a certificate and private key. An external recipient can request a certificate from an external CA (for example from Verisign). However, getting a certificate from DJIGZO's built-in CA is much simpler than requesting a certificate from an external CA. With DJIGZO's built-in CA, the external user only need to install a password protected pfx file.

Note: the email address of the CA should be specified before the password protected pfx file can be sent. For more information, see *CA email* setting in section *CA settings* of the *DJIGZO Administration Guide*.

For each external recipient requiring an S/MIME certificate do the following:

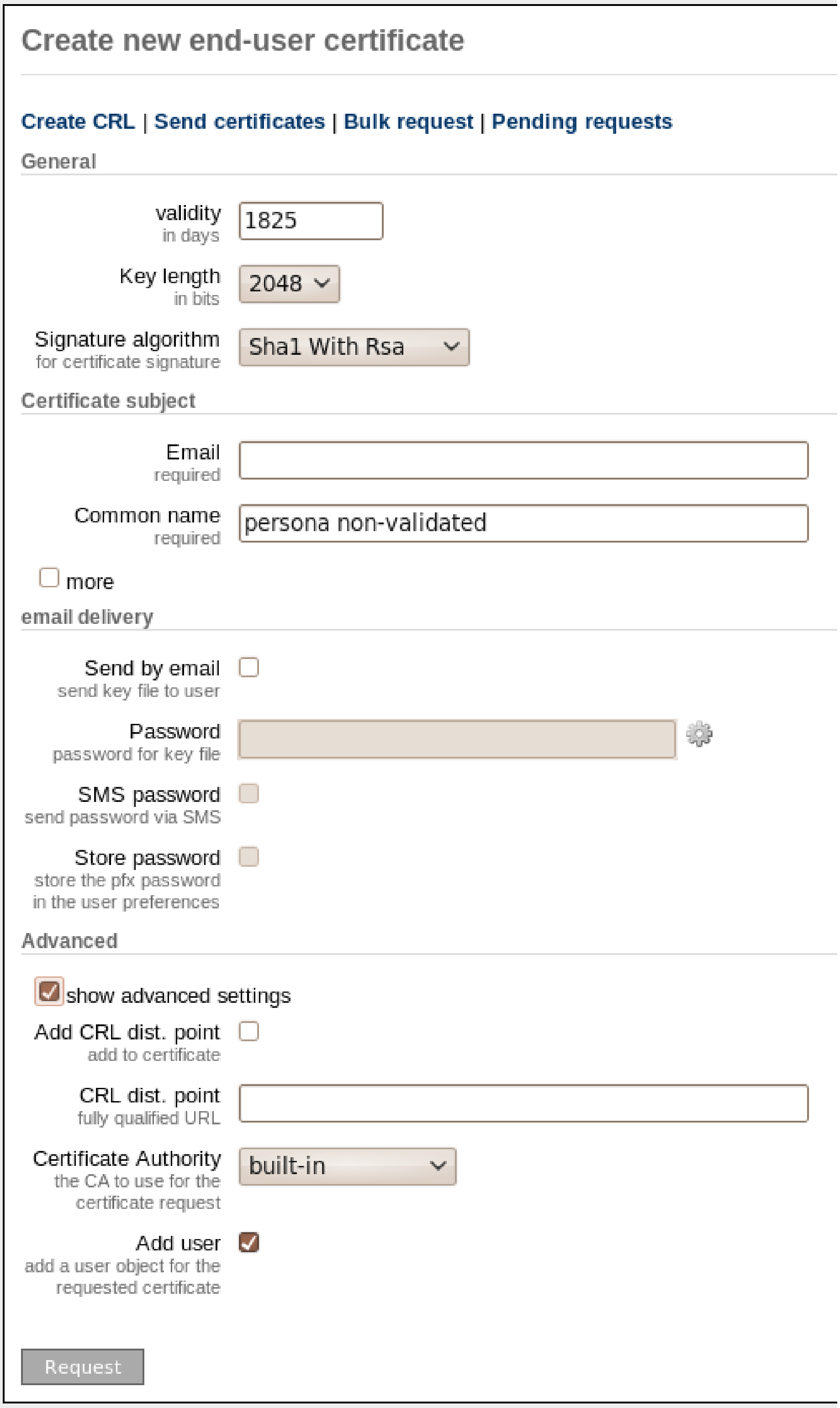
1. Create a new user.
2. Set the S/MIME *Allow* property.
3. Create a new end-user certificate by clicking CA (this opens the *Create end-user certificate* page, see figure 2)
4. Set validity to 1825 days (5 years) and key length to 2048[7].
5. Set signature algorithm to *SHA1 With RSA*[8].
6. Set email to the email address of the external user.
7. Set a common name to identify the user (for example use the first and last name of the user).
8. If the certificate and private key should be sent by email to the external recipient in a password encrypted pfx file, select *Send by email* and select a secure password [9].

[6] Windows versions prior to *XP-sp3* do not support *SHA256 With RSA* or better. If older Windows versions should be supported, you are advised to use *SHA1 With RSA*. If support for older Windows versions is not required, you are advised to select *SHA256 With RSA*.

[7] 2048 is the best compromise between security and key length.

[8] Windows versions prior to *XP-sp3* do not support *SHA256 With RSA* or better. If older Windows versions should be supported, you are advised to use *SHA1 With RSA*. If support for older Windows versions is not required, you are advised to select *SHA256 With RSA*.

[9] the 'gear' icon generates a secure random password



Create new end-user certificate

Create CRL | Send certificates | Bulk request | Pending requests

General

validity in days: 1825

Key length in bits: 2048

Signature algorithm for certificate signature: Sha1 With Rsa

Certificate subject

Email required:

Common name required: persona non-validated

□ more

email delivery

Send by email send key file to user: □

Password password for key file:

SMS password send password via SMS: □

Store password store the pfx password in the user preferences: □

Advanced

☑ show advanced settings

Add CRL dist. point add to certificate: □

CRL dist. point fully qualified URL:

Certificate Authority the CA to use for the certificate request: built-in

Add user add a user object for the requested certificate: ☑

Figure 2: Create end-user certificate

9. If the recipient should receive the pfx password via an SMS Text message, select *SMS password*. The recipients telephone number should be set for the external user.
10. Click *Create* to create the certificate and private key for the user.

After the certificate has been created, the certificates will be added to the certificate store. If *Send by email* was selected, the certificate and private key will be stored inside a password encrypted pfx file and a message with the pfx file will be sent to the recipient. If the *SMS password* was selected, the password for the pfx file will be sent to the recipient via an SMS Text message. If the password was not sent via an SMS Text message, an alternative channel should be used to let the recipient know what the password is.

The pfx file with the certificate and private key should be installed on the recipients email client. The next sections will briefly explain the pfx file installation procedures for some of the most used email clients.

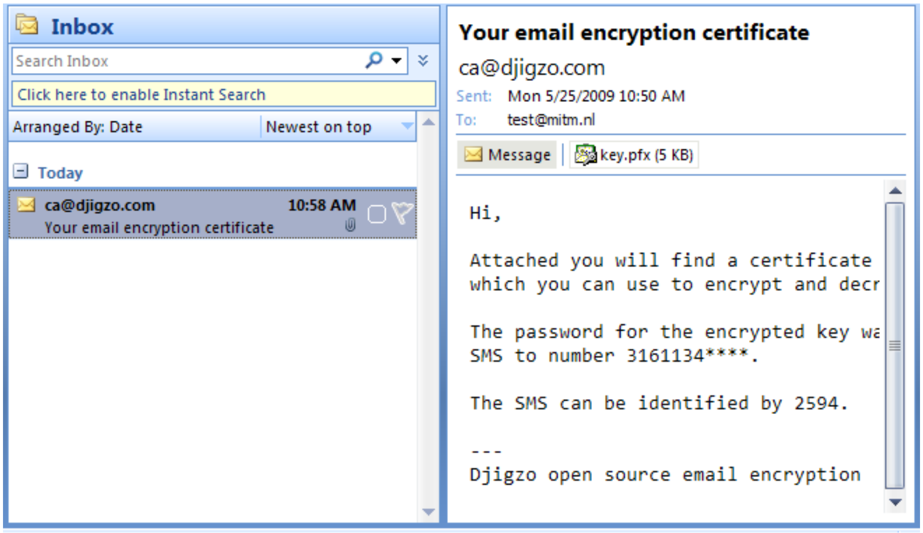
4 Email clients setup

The next sections will explain the pfx file installation procedures for some of the most used email clients.

4.1 Outlook

4.1.1 Importing the pfx attachment

An Outlook recipient receives a message with the password encrypted pfx file as an attachment (see figure 3).



ca@djigzo.com 10:58 AM
Your email encryption certificate

Your email encryption certificate
ca@djigzo.com
Sent: Mon 5/25/2009 10:50 AM
To: test@mitm.nl

```
Hi,

Attached you will find a certificate
which you can use to encrypt and decr

The password for the encrypted key wa
SMS to number 3161134****.

The SMS can be identified by 2594.

---
Djigzo open source email encryption
```

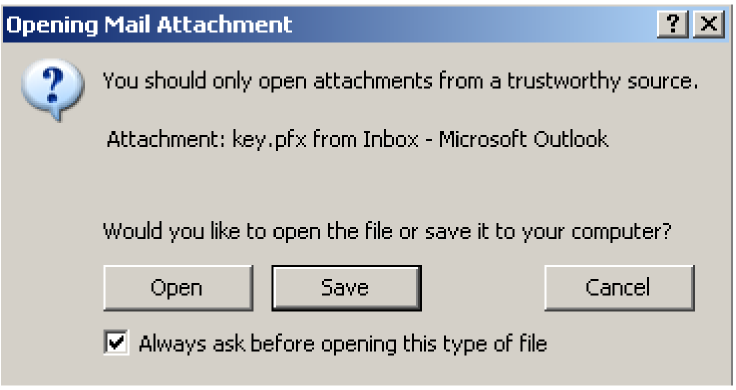
Figure 3: Outlook pfx attachment

The pfx file can be imported with the following procedure:

1. Start the "certificate import wizard".
2. Go to password page.
3. Enter the private key password.
4. Go to finish page.
5. Accept the trusted root certificate.

These steps will now be explained in more detail.

1. Start the "certificate import wizard" Double click the attached pfx file (alternatively save the pfx file and open it with the file Explorer). A warning will be shown asking whether the pfx file should be opened (see figure 4). Click on the *Open* button. The *certificate import wizard* will now be started.



Opening Mail Attachment

You should only open attachments from a trustworthy source.

Attachment: key.pfx from Inbox - Microsoft Outlook

Would you like to open the file or save it to your computer?

☑ Always ask before opening this type of file

Figure 4: Outlook open pfx file

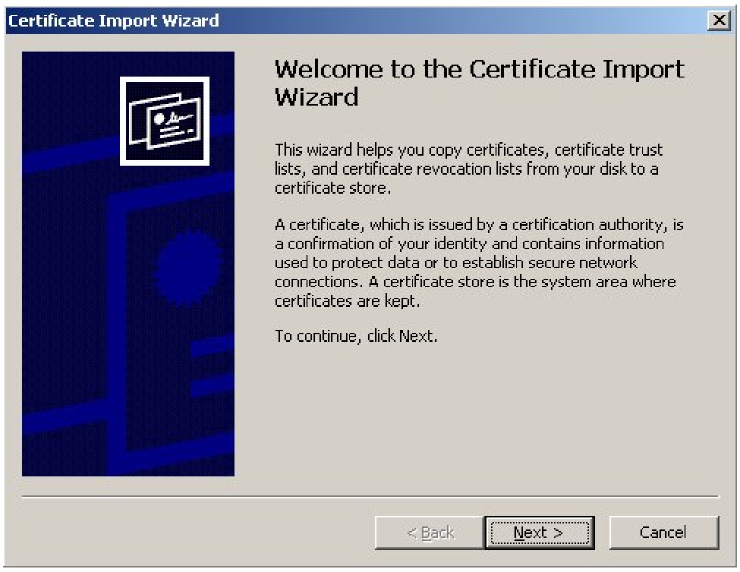
2. Go to password page Click Next button until the password page (see figure 5).

3. Enter the private key password Enter the pfx file password (see figure 6). The following two options can optionally be enabled: *Enable strong private key protection* and *Mark this key as exportable*

Enable strong private key protection If this option is selected Windows will always ask for permission when a program tries to access the private key.

Mark this key as exportable If this option is selected, the private key can be exported to create a backup of the private key.

4. Go to finish page Click next until the finish page (see figure 7).



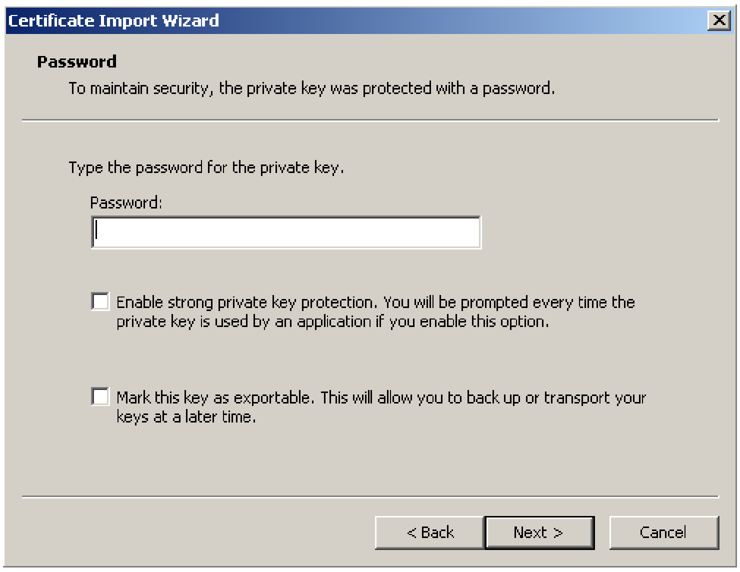
Welcome to the Certificate Import Wizard

This wizard helps you copy certificates, certificate trust lists, and certificate revocation lists from your disk to a certificate store.

A certificate, which is issued by a certification authority, is a confirmation of your identity and contains information used to protect data or to establish secure network connections. A certificate store is the system area where certificates are kept.

To continue, click Next.

Figure 5: Certificate import wizard



Password

To maintain security, the private key was protected with a password.

Type the password for the private key.

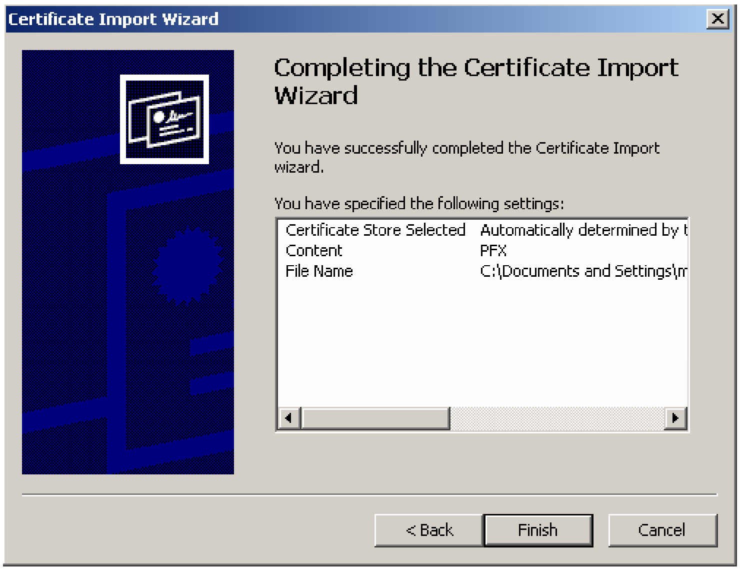
Password:

☐ Enable strong private key protection. You will be prompted every time the private key is used by an application if you enable this option.

☐ Mark this key as exportable. This will allow you to back up or transport your keys at a later time.

Figure 6: Enter pfx password

5. Accept the trusted root certificate On the final page, click *Finish* to start the certificate and private key import procedure. The pfx file not only contains an end-user certificate and private key, but also the root and intermediate certificates. The import wizard will try to import the root and intermediate certificates. When importing a root certificate a warning dialog is shown asking for permission to import the root certificate (see figure 8). Click *Yes* to accept the root certificate.



Completing the Certificate Import Wizard

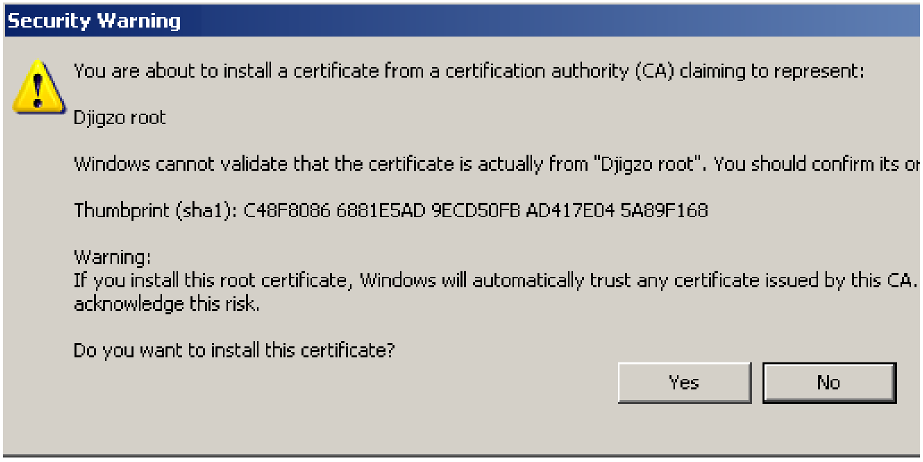
You have successfully completed the Certificate Import wizard.

You have specified the following settings:

Certificate Store Selected	Automatically determined by t
Content	PFX
File Name	C:\Documents and Settings\m

Figure 7: Certificate wizard finish

Warning: Only accept the root certificate if it comes from a trusted entity.



You are about to install a certificate from a certification authority (CA) claiming to represent:

Djigzo root

Windows cannot validate that the certificate is actually from "Djigzo root". You should confirm its or

Thumbprint (sha1): C48F8086 6881E5AD 9ECD50FB AD417E04 5A89F168

Warning:
If you install this root certificate, Windows will automatically trust any certificate issued by this CA.
acknowledge this risk.

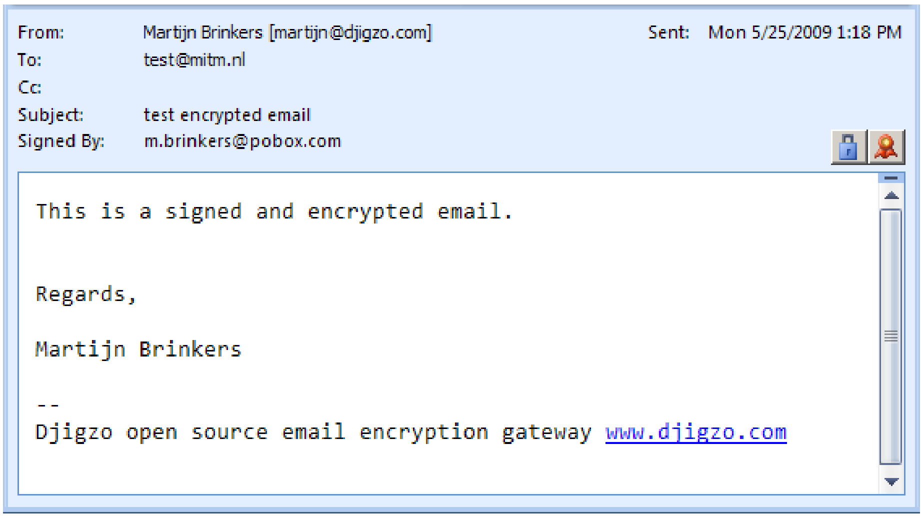
Do you want to install this certificate?

Figure 8: Certificate wizard root import warning

4.1.2 Receiving and sending S/MIME

Now a certificate and private key have been installed, S/MIME encrypted and digitally signed email can be sent and received. An example of a signed an encrypted email in Outlook is shown in figure 9.

The “padlock” indicates that the message was encrypted and the “ribbon” indicates that the message was signed (see figure 10) The signed and encrypted message contains the public certificate of the sender. To make it pos-



From: Martijn Brinkers [martijn@djigzo.com] Sent: Mon 5/25/2009 1:18 PM
To: test@mitm.nl
Cc:
Subject: test encrypted email
Signed By: m.brinkers@pobox.com

```
This is a signed and encrypted email.

Regards,

Martijn Brinkers

--
Djigzo open source email encryption gateway www.djigzo.com
```

Figure 9: Outlook signed and encrypted

sible to reply to the message, the public certificate should be associated with the sender. This can be done by clicking the senders email address then right-click and select *Add to Outlook Contacts* (see figure 11).

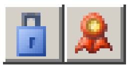
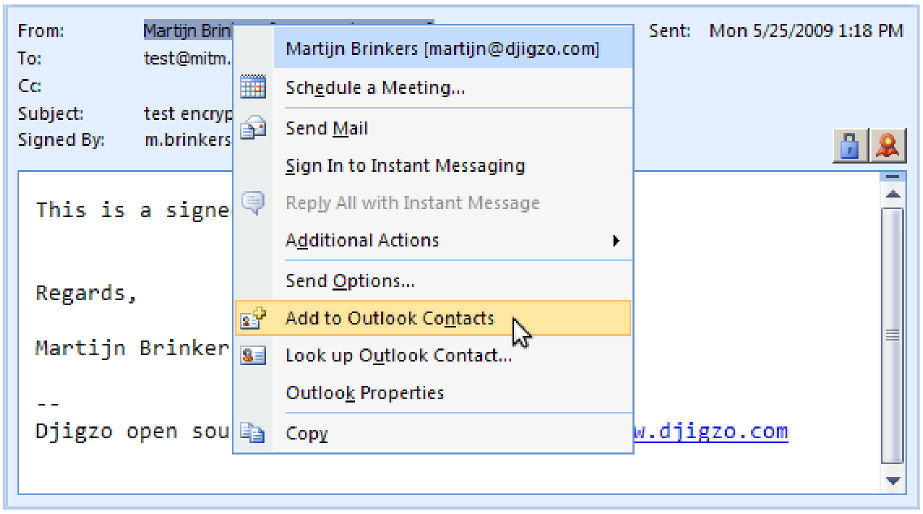


Figure 10: Outlook sign and encrypt icons



From: Martijn Brin Sent: Mon 5/25/2009 1:18 PM
To: test@mitm.
Cc:
Subject: test encryp
Signed By: m.brinkers

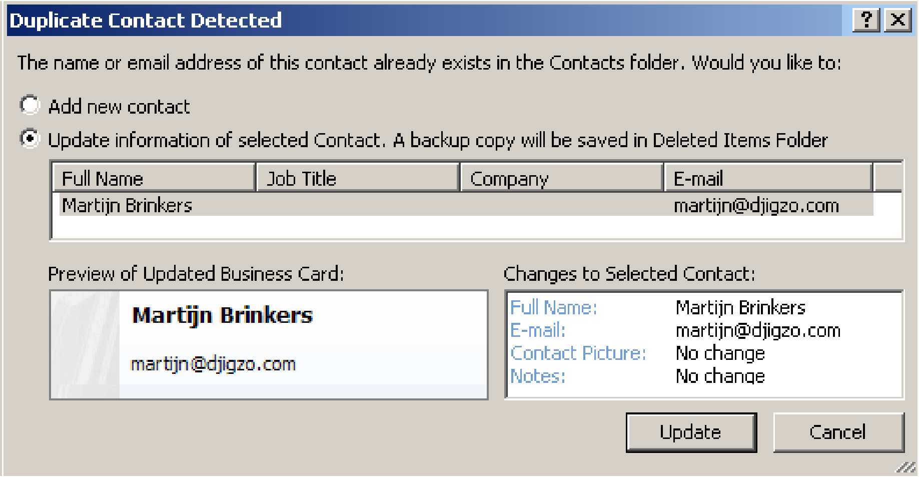
```
This is a signe

Regards,

Martijn Brinker

--
Djigzo open sou w.djigzo.com
```

Martijn Brinkers [martijn@djigzo.com]
Schedule a Meeting...
Send Mail
Sign In to Instant Messaging
Reply All with Instant Message
Additional Actions
Send Options...
Add to Outlook Contacts
Look up Outlook Contact...
Outlook Properties
Copy

Figure 11: Outlook add to contacts

Now save the newly added Outlook contact. If the contact is already part of your contacts you will receive a “Duplicate Contact Detected” (see figure 12).

Click *Update* to add the certificate to the contact.



Duplicate Contact Detected

The name or email address of this contact already exists in the Contacts folder. Would you like to:

○ Add new contact

● Update information of selected Contact. A backup copy will be saved in Deleted Items Folder

Full Name	Job Title	Company	E-mail
Martijn Brinkers			martijn@djigzo.com

Preview of Updated Business Card:

Martijn Brinkers

martijn@djigzo.com

Changes to Selected Contact:

Full Name:	Martijn Brinkers
E-mail:	martijn@djigzo.com
Contact Picture:	No change
Notes:	No change

Figure 12: Outlook duplicate contact

Note: You only need to associate the certificate with the sender contact the first time you receive a signed and encrypted email.

4.1.3 Sending signed and encrypted email

Sending a signed and encrypted email with Outlook is similar to sending a normal non-encrypted email. Sign and encrypt is triggered by selecting the sign and encrypt options. Outlook 2007 adds these icons to the toolbar (see figure 13). With older versions of Outlook the sign and encrypt icons can be manually added to the toolbar or the sign and encrypt option can be selected by opening the message options and selecting the *Security Settings...* (see figure 14).

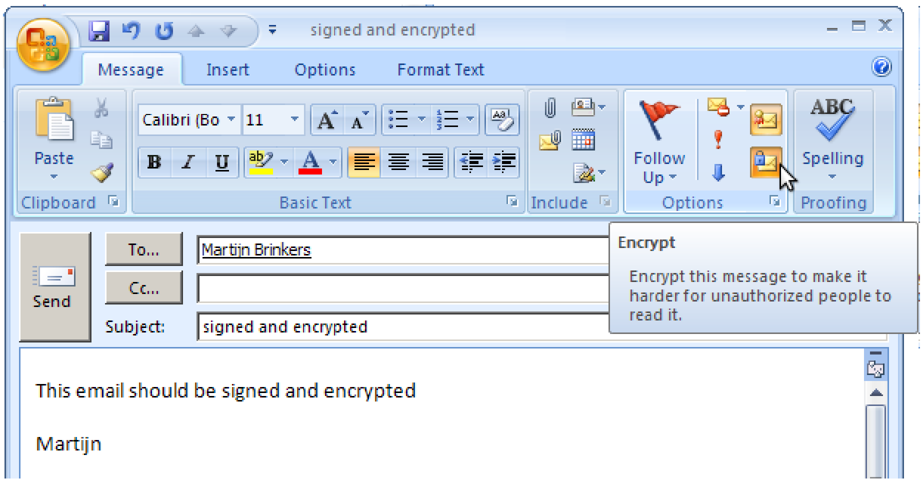
In order to encrypt an email for a recipient, the certificate of the recipient must be available. If Outlook cannot find a certificate for one of the recipients a warning will be shown (see figure 15).

A message cannot be encrypted when the recipient does not have a certificate associated with the contact. A copy of the recipients certificate can be directly imported into the associated contact. To do this, open the contact and select the *Certificates* for the contact[10] (see figure 16) and import the certificate file (.cer or .p7b).

4.2 Outlook Express

An Outlook Express recipient receives a message with the password encrypted pfx file as an attachment (see figure 17).

[10] In Outlook 2003 you should open the *Certificates* tab.



To...: Martijn Brinkers

Subject: signed and encrypted

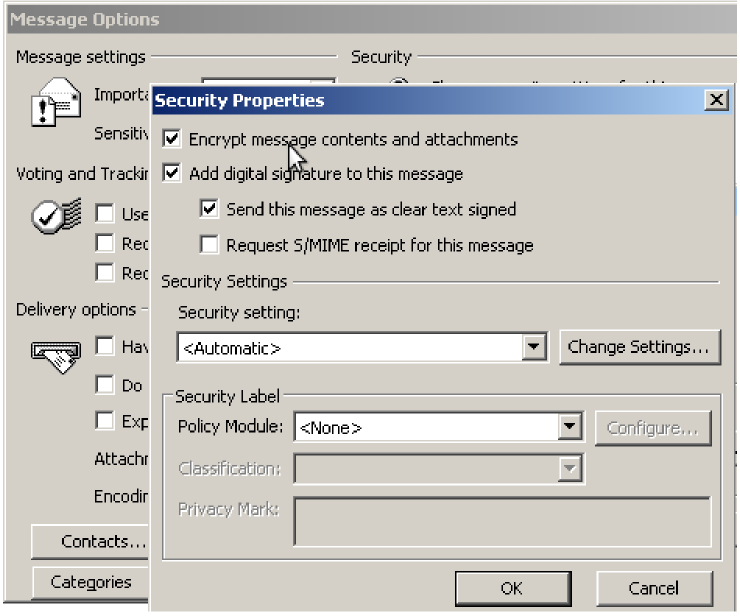
Encrypt

Encrypt this message to make it harder for unauthorized people to read it.

This email should be signed and encrypted

Martijn

Figure 13: Outlook sign and encrypt options



☑ Encrypt message contents and attachments

☑ Add digital signature to this message

☑ Send this message as clear text signed

□ Request S/MIME receipt for this message

Security Settings

Security setting: <Automatic>

Security Label

Policy Module: <None>

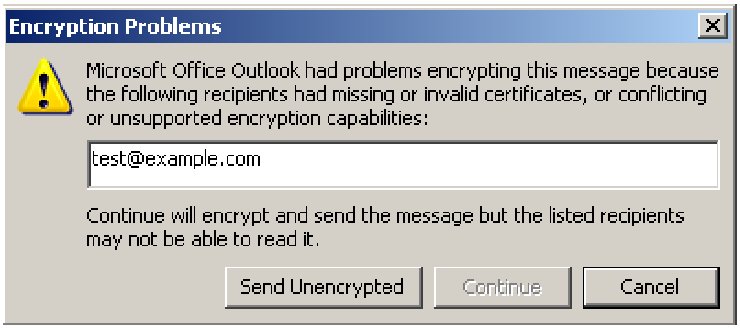
Classification:

Privacy Mark:

Figure 14: Outlook security properties

4.2.1 Importing the pfx attachment

Importing the pfx from Outlook Express is similar to importing from Outlook. See section 4.1.1 for a detailed explanation on how to import the pfx attachment.



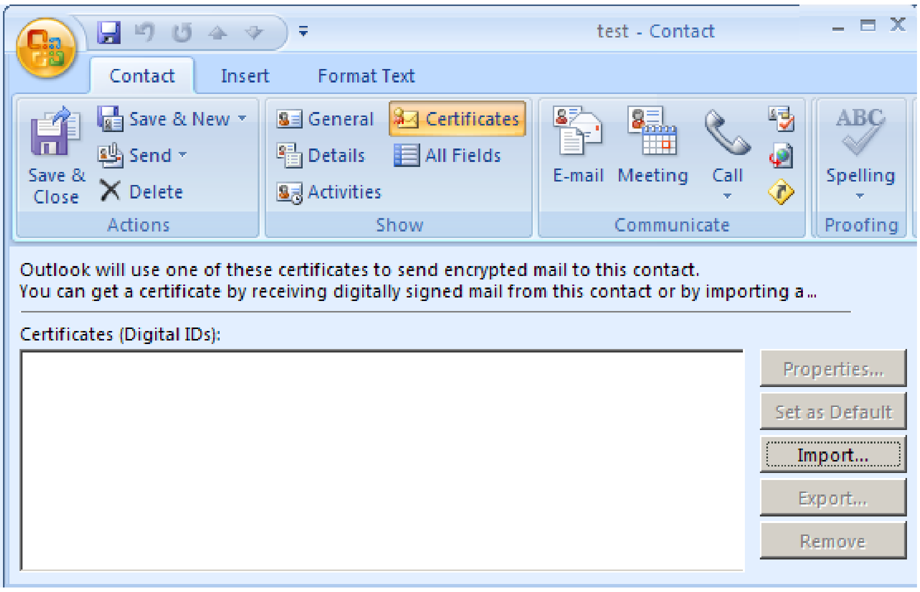
Encryption Problems

Microsoft Office Outlook had problems encrypting this message because the following recipients had missing or invalid certificates, or conflicting or unsupported encryption capabilities:

test@example.com

Continue will encrypt and send the message but the listed recipients may not be able to read it.

Figure 15: Outlook encryption problems



Outlook will use one of these certificates to send encrypted mail to this contact.
You can get a certificate by receiving digitally signed mail from this contact or by importing a...

Certificates (Digital IDs):

Figure 16: Outlook contact certificates

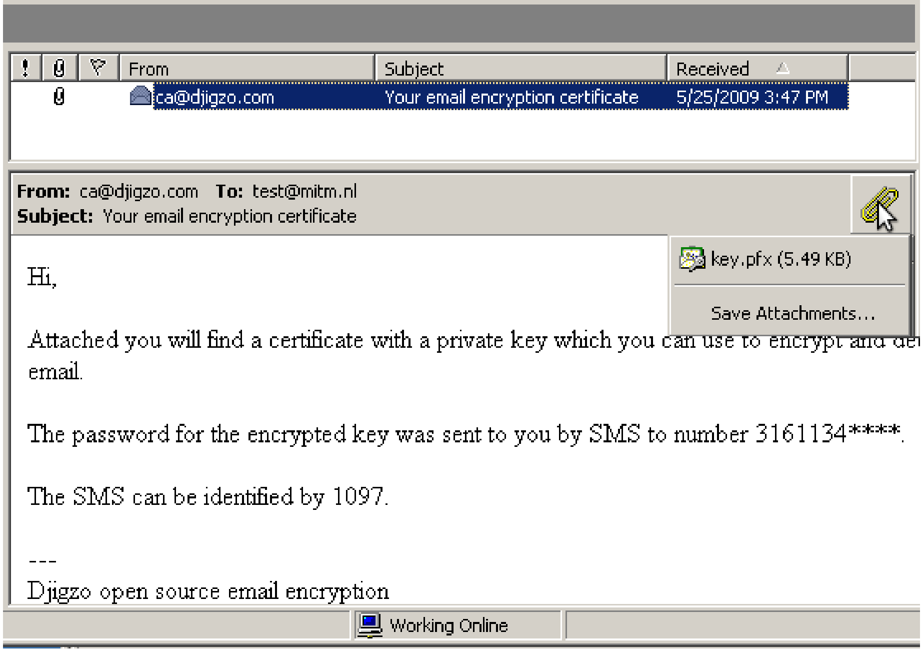
4.2.2 Receiving and sending S/MIME

Now a certificate and private key have been installed, S/MIME encrypted and digitally signed email can be sent and received. An example of a signed an encrypted email in Outlook Express is shown in figure 18.

The “padlock” indicates that the message was encrypted and the “ribbon” indicates that the message was signed (see figure 19) Outlook Express automatically associates the certificate of the sender with the senders contact.

4.2.3 Sending signed and encrypted email

Sending a signed and encrypted email with Outlook is similar to sending a normal non-encrypted email. Sign and encrypt is triggered by selecting the sign and encrypt options (see figure 20)



!	🖇	⚑	From	Subject	Received
	🖇		ca@djigzo.com	Your email encryption certificate	5/25/2009 3:47 PM

From: ca@djigzo.com **To:** test@mitm.nl
Subject: Your email encryption certificate

Hi,

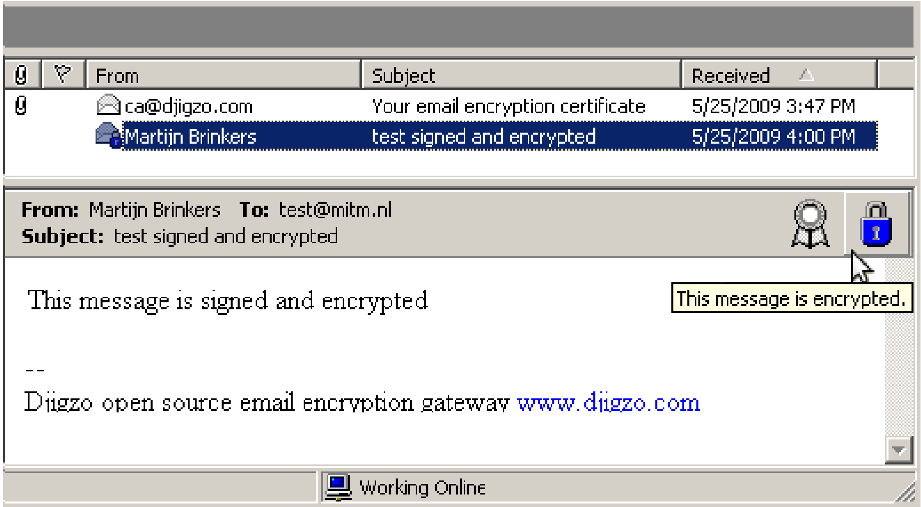
Attached you will find a certificate with a private key which you can use to encrypt and de
email.

The password for the encrypted key was sent to you by SMS to number 3161134****.

The SMS can be identified by 1097.

Djigzo open source email encryption

Figure 17: Outlook Express pfx attachment



🖇	⚑	From	Subject	Received
🖇		ca@djigzo.com	Your email encryption certificate	5/25/2009 3:47 PM
		Martijn Brinkers	test signed and encrypted	5/25/2009 4:00 PM

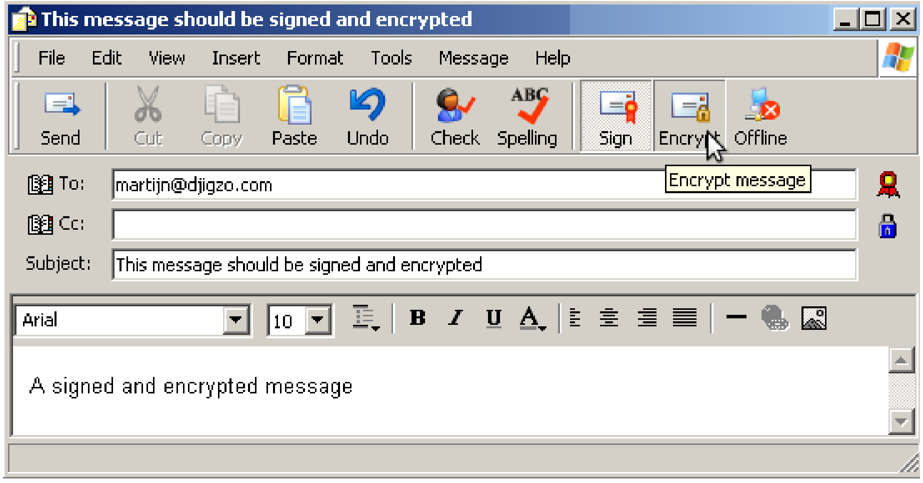
From: Martijn Brinkers **To:** test@mitm.nl
Subject: test signed and encrypted

This message is signed and encrypted

--
Djigzo open source email encryption gateway www.djigzo.com

Figure 18: Outlook Express signed and encrypted

Figure 19: Outlook Express sign and encrypt icons



To: martijn@djigzo.com

Cc:

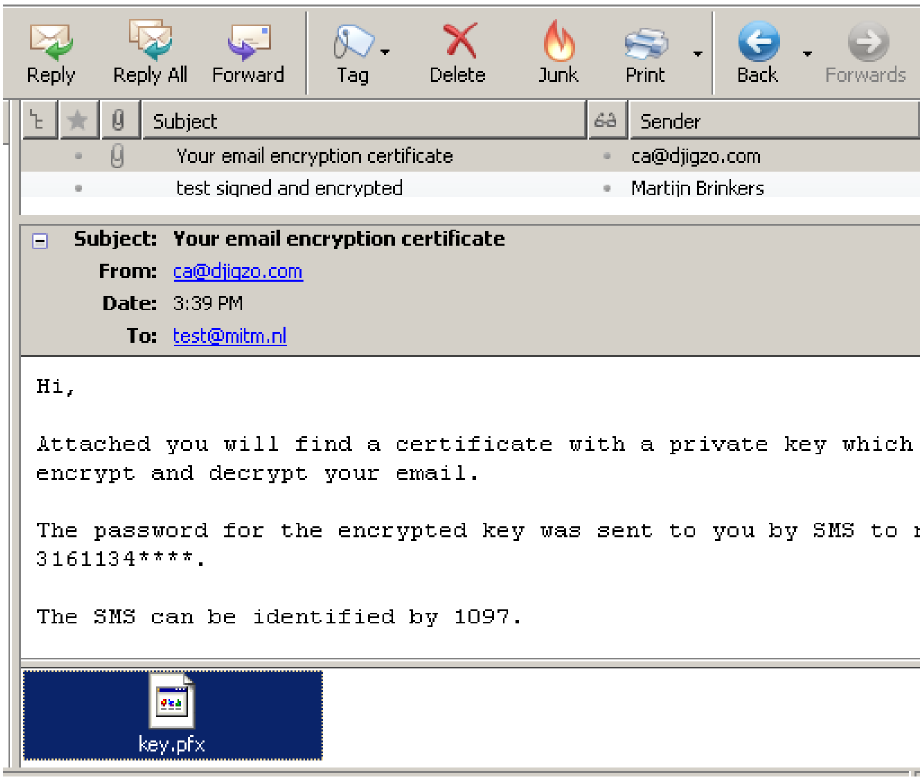
Subject: This message should be signed and encrypted

A signed and encrypted message

Figure 20: Outlook Express sign and encryption options

4.3 Thunderbird

A Thunderbird recipient receives a message with the password encrypted pfx file as an attachment (see figure 21).



Subject	Sender
Your email encryption certificate	ca@djigzo.com
test signed and encrypted	Martijn Brinkers

Subject: **Your email encryption certificate**
From: ca@djigzo.com
Date: 3:39 PM
To: test@mitm.nl

Hi,

Attached you will find a certificate with a private key which
encrypt and decrypt your email.

The password for the encrypted key was sent to you by SMS to
3161134****.

The SMS can be identified by 1097.

key.pfx

Figure 21: Thunderbird pfx attachment

4.3.1 Importing the pfx attachment

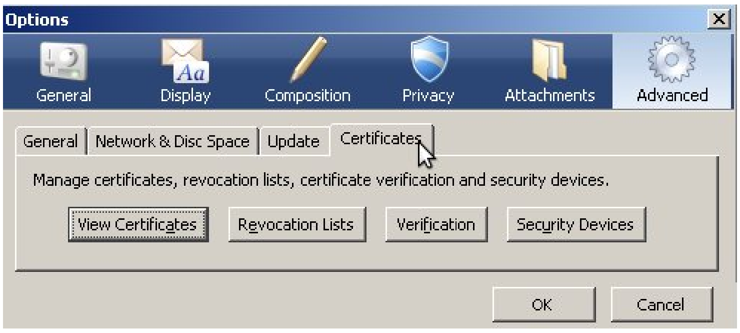
The pfx file can be imported with the following procedure:

1. Save the pfx file to the desktop.
2. Open the certificate manager.
3. Import the pfx.
4. Set the master password.
5. Enter the pfx password.
6. Lookup the name of the imported root.
7. Enable the imported root for S/MIME.
8. Select a signing and encryption certificate.

These steps will now be explained in more detail.

1. Save the pfx file to the desktop The pfx attached to the messages should be saved before the pfx can be imported. The the key.pfx attachment should be saved to the desktop (or to any other location normally used for attachments).

2. Open the certificate manager Open the Thunderbird options dialog (**Tools**→**Options**[11]). Select the *Advanced settings* and select the *Certificates* tab (see figure 22). Now click *View Certificates*. The *Certificate Manager* will now be opened (see figure 23).

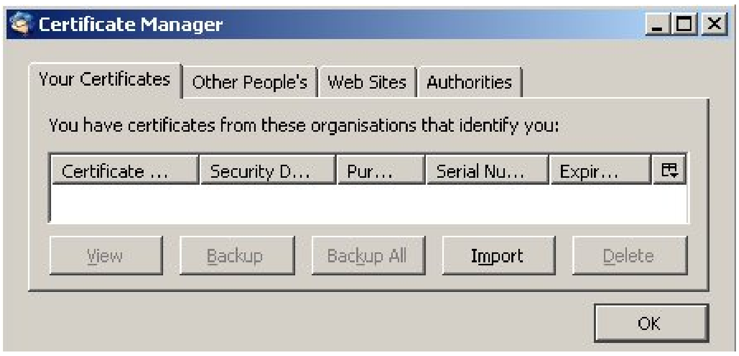


Manage certificates, revocation lists, certificate verification and security devices.

Figure 22: Thunderbird certificates options

3. Import the pfx On the *Certificate Manager* select the *Your Certificates* tab, click the *Import* button and select the pfx file which was previously saved in step 1.

[11] On some Thunderbird versions the options dialog should be opened with **Edit**→**Preferences**

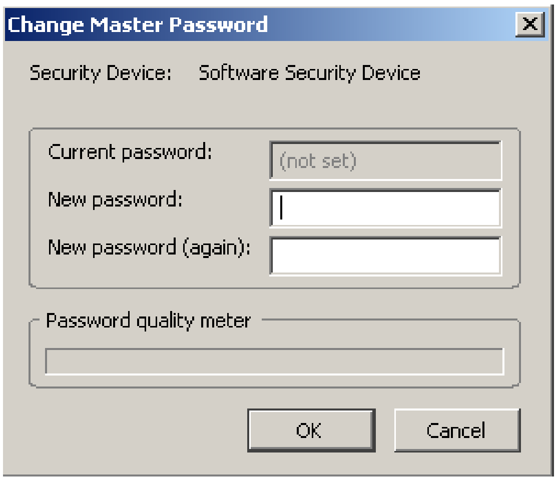


You have certificates from these organisations that identify you:

Figure 23: Thunderbird certificate manager

4. Set the master password The first time a certificate is added to Thunderbird, the *Master Password* for the key store should be set (see figure 24). The master password is used to protect the private keys which are stored in Thunderbird. The private keys are encrypted with the *Master Password* to ensure that only the owner can access the private keys.

Note: this is NOT the password of the pfx file from step 1! A secure master password should be selected by the computer owner or administrator. If the master password was already set, the master password should be entered before a new certificate can be imported.

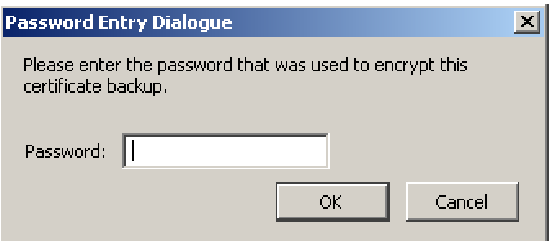


Security Device: Software Security Device

Current password: (not set)

Figure 24: Thunderbird master password

5. Enter the pfx password The password for the pfx file should now be entered (see figure 25). This is the password that was provided via an SMS Text message or provided by other means. Clicking *OK* will start the import process.



Password Entry Dialogue

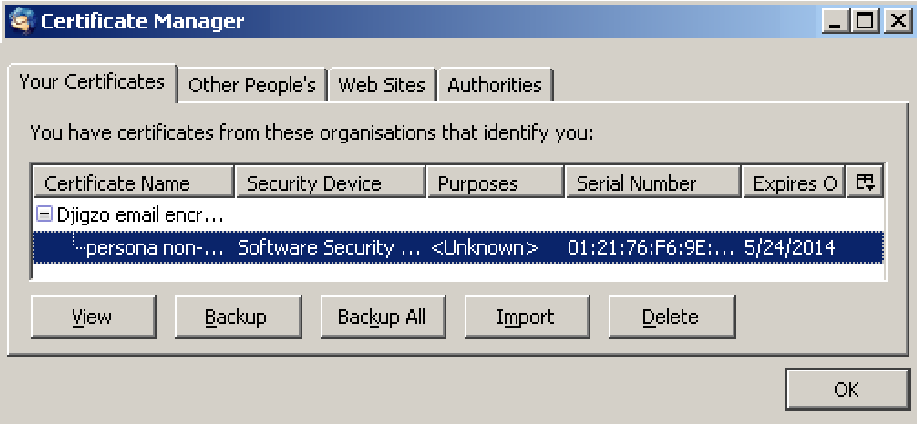
Please enter the password that was used to encrypt this certificate backup.

Password:

Figure 25: Thunderbird password entry dialog

6. Lookup the name of the imported root The imported root certificate is not yet enabled for S/MIME. Before the root certificate can be enabled for S/MIME the name of the root certificate should be looked up first. Open the *Certificate Manager*, select the *Your Certificates* tab and select the certificate that was just imported (see figure 26).

Double click the certificate to open the certificate details page (see figure 27). The first entry in the *Certificate Hierarchy* is the root certificate. The name of the root certificate is needed in the following steps.



Certificate Manager

You have certificates from these organisations that identify you:

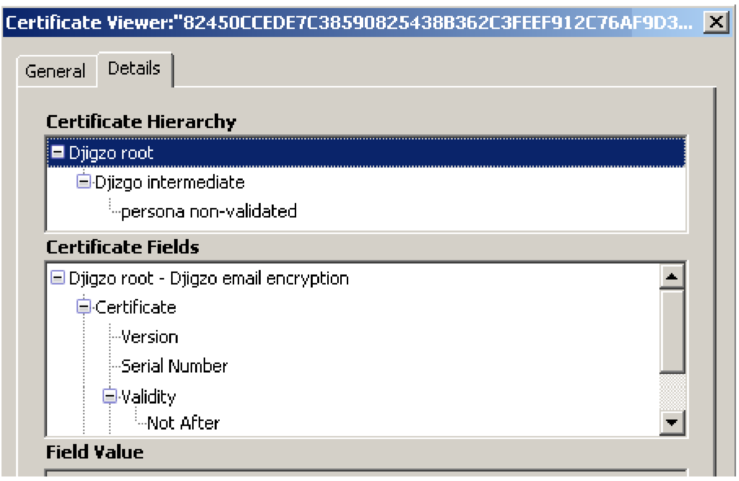
Certificate Name	Security Device	Purposes	Serial Number	Expires O
Djigzo email encr...				
persona non-...	Software Security ...	<Unknown>	01:21:76:F6:9E:...	5/24/2014

Figure 26: Thunderbird manager your certificates

7. Enable the imported root for S/MIME Open the *Certificate Manager* and select the *Authorities* tab (see figure 28). Select the root certificate from step 6 and click the *Edit* button to open the *Edit CA certificate trust settings* page.

On the *Edit CA certificate trust settings* page, select “This certificate can identify mail users” to enable the root certificate for S/MIME (see figure 29). Click *OK* and close all dialogs.

8. Select a signing and encryption certificate Now that a certificate and private key have been imported, the encryption and signing certificate should


Certificate Viewer:"82450CCEDE7C38590825438B362C3FEEF912C76AF9D3...
General
Details

Certificate Hierarchy

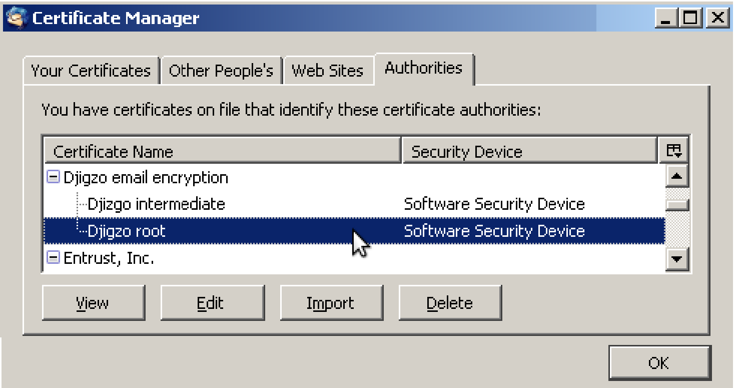
- Djigzo root
  - Djigzo intermediate
    - persona non-validated

Certificate Fields

- Djigzo root - Djigzo email encryption
  - Certificate
    - Version
    - Serial Number
    - Validity
      - Not After

Field Value

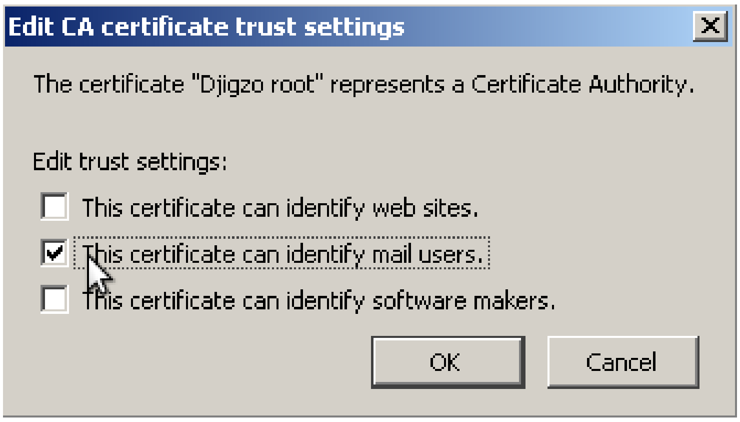
Figure 27: Thunderbird certificate details



You have certificates on file that identify these certificate authorities:

Certificate Name	Security Device
Djigzo email encryption	
Djigzo intermediate	Software Security Device
Djigzo root	Software Security Device
Entrust, Inc.	

Figure 28: Thunderbird authorities



The certificate "Djigzo root" represents a Certificate Authority.

Edit trust settings:

☐ This certificate can identify web sites.

☑ This certificate can identify mail users.

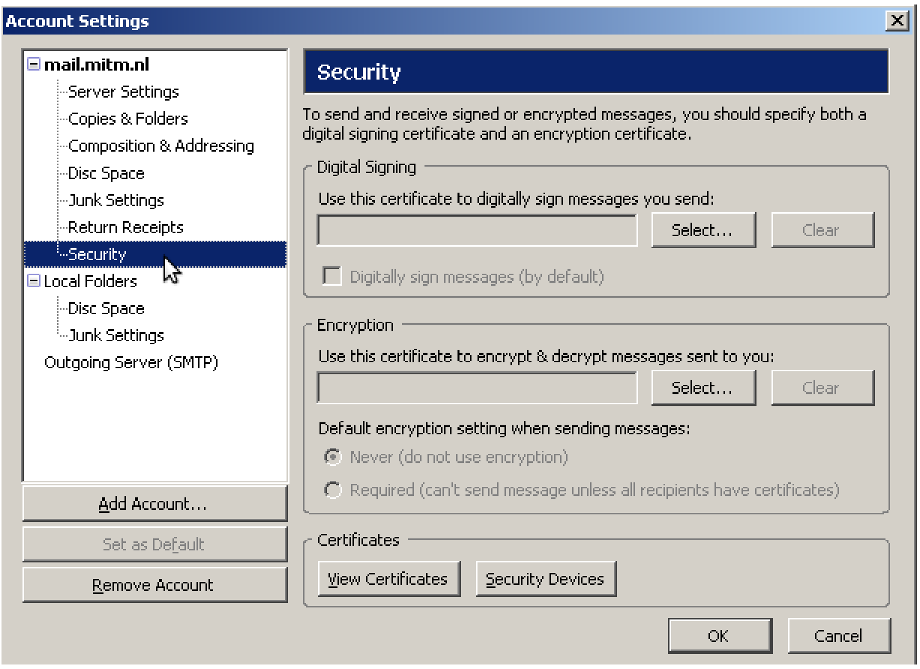
☐ This certificate can identify software makers.

Figure 29: Thunderbird CA certificate trust settings

be selected. Open the *Account Settings* page (***Tools***→***Account Settings...***[12]). Now select the security options of the email account for which the signing and encryption certificate should be set (see figure 30).

To select a signing and encryption certificate, click the *Select...* button for *Digital Signing* and *Encryption* and select the newly added certificate. Leave all other settings to their default values and close the account settings dialog.

Thunderbird is now ready for sending and receiving signed and encrypted email.



Account Settings

- mail.mitm.nl
  - Server Settings
  - Copies & Folders
  - Composition & Addressing
  - Disc Space
  - Junk Settings
  - Return Receipts
  - Security
- Local Folders
  - Disc Space
  - Junk Settings
- Outgoing Server (SMTP)

Add Account... | Set as Default | Remove Account

Security

To send and receive signed or encrypted messages, you should specify both a digital signing certificate and an encryption certificate.

Digital Signing

Use this certificate to digitally sign messages you send:

[ ] Select... Clear

□ Digitally sign messages (by default)

Encryption

Use this certificate to encrypt & decrypt messages sent to you:

[ ] Select... Clear

Default encryption setting when sending messages:

● Never (do not use encryption)

○ Required (can't send message unless all recipients have certificates)

Certificates

View Certificates | Security Devices

OK | Cancel

Figure 30: Thunderbird Account Settings

4.3.2 Receiving signed and encrypted email

An example of a signed an encrypted email in Thunderbird is shown in figure 32. The “padlock” indicates that the message was encrypted and the “ribbon” indicates that the message was signed (see figure 31)

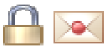
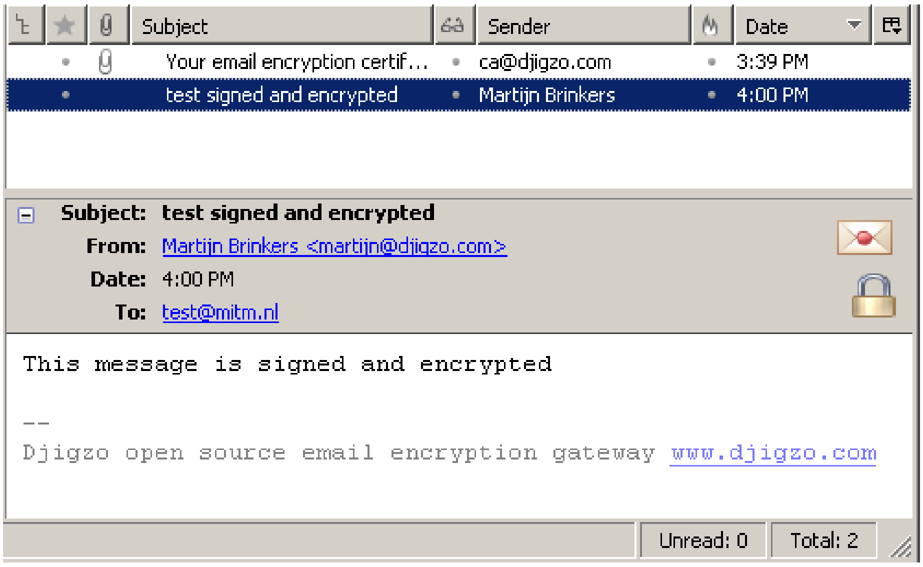


Figure 31: Thunderbird sign and encrypt icons

[12] On some Thunderbird versions the Account Settings should be opened with **Edit**→**Account Settings...**



Subject	Sender	Date
Your email encryption certif…	ca@djigzo.com	3:39 PM
test signed and encrypted	Martijn Brinkers	4:00 PM

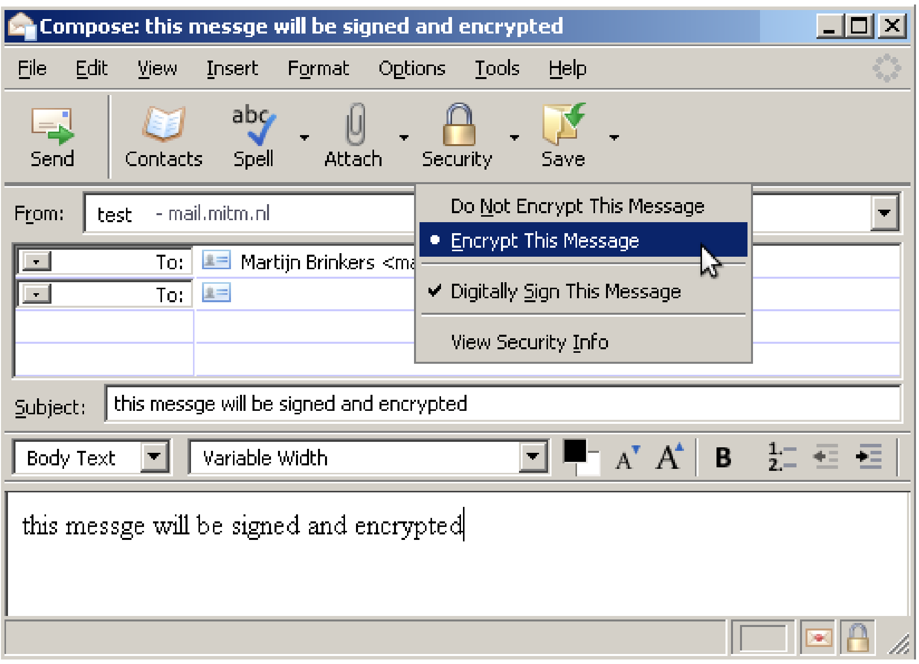
Subject: test signed and encrypted
From: Martijn Brinkers <martijn@djigzo.com>
Date: 4:00 PM
To: test@mitm.nl

```
This message is signed and encrypted

--
Djigzo open source email encryption gateway www.djigzo.com
```

Figure 32: Thunderbird signed and encrypted

4.3.3 Sending signed and encrypted email

A message in Thunderbird can be signed and encrypted by selecting *Encrypt This Message* and *Digitally Sign This Message* from the *Security* pull-down menu (see figure 33).



Compose: this messge will be signed and encrypted

From: test - mail.mitm.nl

To: Martijn Brinkers <ma

To:

Subject: this messge will be signed and encrypted

this messge will be signed and encrypted

Figure 33: Thunderbird sign and encrypt

4.4 Apple Mail

4.4.1 Importing the pfx attachment

The pfx file can be imported with the following procedure:

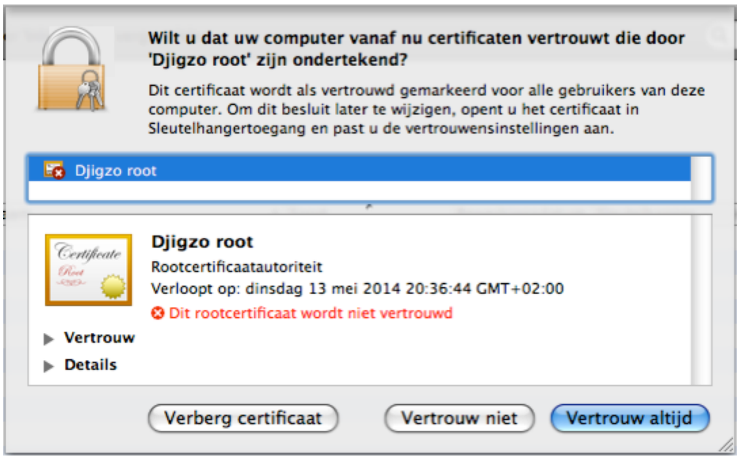
1. Start the *Keychain Access* application.
2. Enter the pfx password.
3. Accept the root certificate.
4. Restart Mail.

These steps will now be explained in more detail.

1. Start the *Keychain Access* application By double-clicking the pfx file, the *Keychain Access* application will be started. The *Keychain Access* application will automatically start the certificate and private key import process. If the *Keychain Access* application is not automatically opened, drag the pfx file onto the *Keychain Access* application icon[13].

2. Enter the pfx password The password for the pfx file should now be entered. This is the password that was provided via an SMS Text message or provided by other means.

3. Accept the root certificate The pfx file not only contains the end-user certificate and private key but also the root and intermediate certificate. When import a root certificate, the *Keychain Access* application asks whether the root certificate should be trusted[14] (see figure 34). Select *Always trust*.



Wilt u dat uw computer vanaf nu certificaten vertrouwt die door 'Djigzo root' zijn ondertekend?

Dit certificaat wordt als vertrouwd gemarkeerd voor alle gebruikers van deze computer. Om dit besluit later te wijzigen, opent u het certificaat in Sleutelhangertoegang en past u de vertrouwensinstellingen aan.

Djigzo root

Djigzo root
Rootcertificaatautoriteit
Verloopt op: dinsdag 13 mei 2014 20:36:44 GMT+02:00
Dit rootcertificaat wordt niet vertrouwd

Figure 34: Apple Mail trust root certificate

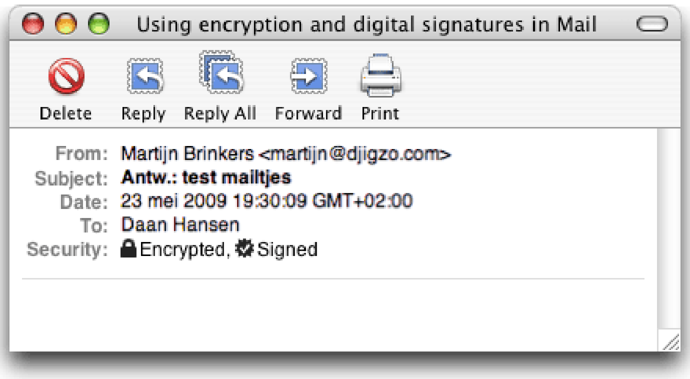
[13] /Applications/Utilities

[14] This example is in Dutch. Dialogs for other languages should look similar.

4. Restart Apple Mail After installing the private key, Apple Mail should be restarted. Apple Mail is now setup for sending and receiving signed and encrypted email.

4.4.2 Receiving signed and encrypted email

An example of a signed an encrypted email in Apple Mail is shown in figure 35.



From: Martijn Brinkers <martijn@djigzo.com>
Subject: **Antw.: test mailtjes**
Date: 23 mei 2009 19:30:09 GMT+02:00
To: Daan Hansen
Security: Encrypted, Signed

Figure 35: Apple Mail signed and encrypted

4.4.3 Sending signed and encrypted email

A message can be signed and encrypted by selecting the sign and encrypt options in the compose window (see figure 36).

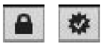


Figure 36: Apple Mail sign and encrypt buttons

4.5 Gmail

If Gmail is accessed via the Gmail web interface, a dedicated browser add-in is required for reading and sending S/MIME messages since Gmail does not natively support S/MIME. A cross-platform add-in is available for Firefox with which S/MIME encrypted email can be sent and received directly from the Gmail web interface.

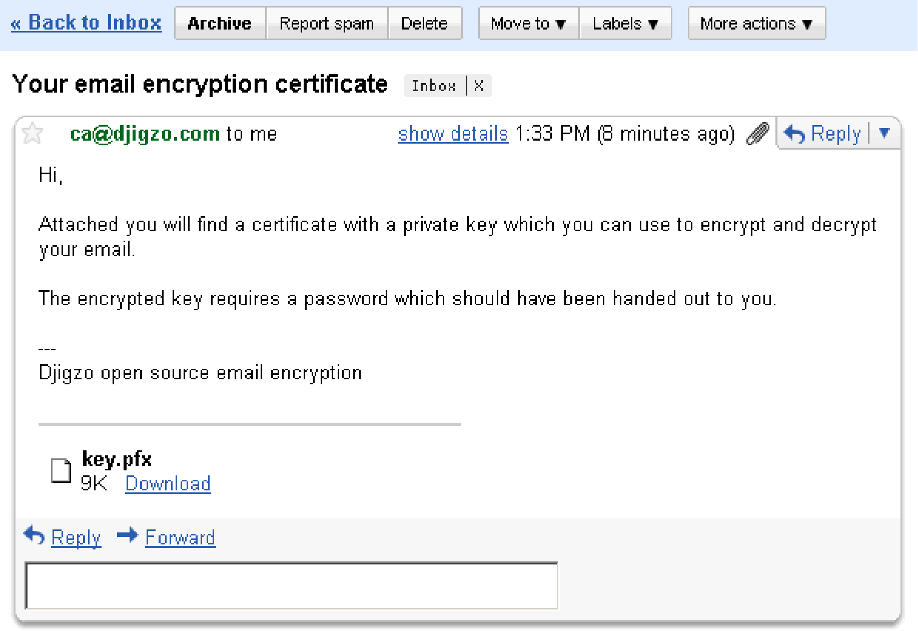
Note: If Gmail is accessed with POP3 or IMAP using an email client, like for instance Outlook, see the guide for the specific email client. This section only explains how to use S/MIME with the Gmail web interface.

4.5.1 Installing the Firefox add-in

The Gmail add-in can be downloaded from `https://addons.mozilla.org/en-US/firefox/addon/592`. The add-in can be installed by clicking *Add to Firefox*.

4.5.2 Importing the pfx attachment

A Gmail recipient receives a message with the password encrypted pfx file as an attachment (see figure 37).



Your email encryption certificate

ca@djigzo.com to me 1:33 PM (8 minutes ago)

Hi,

Attached you will find a certificate with a private key which you can use to encrypt and decrypt your email.

The encrypted key requires a password which should have been handed out to you.

Djigzo open source email encryption

key.pfx
9K

Figure 37: Gmail pfx attachment

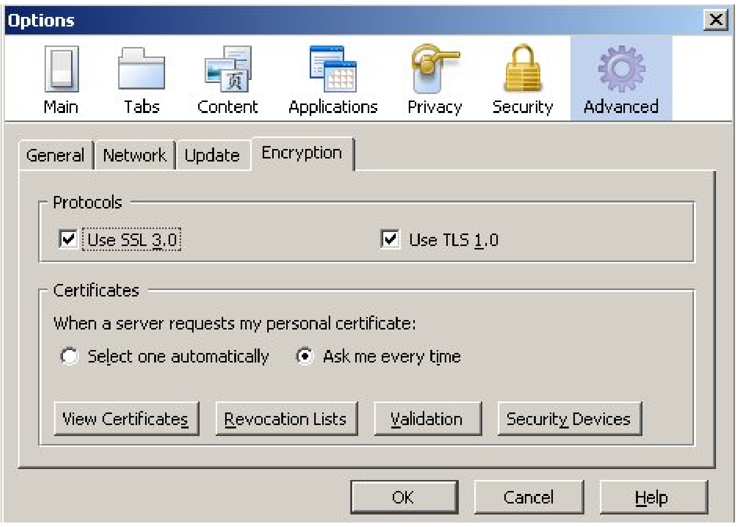
The pfx file can be imported with the following procedure:

1. Save the pfx file to the desktop.
2. Open the certificate manager.
3. Import the pfx.
4. Set the master password.
5. Enter the pfx password.
6. Lookup the name of the imported root.
7. Enable the imported root for S/MIME.

These steps will now be explained in more detail.

1. Save the pfx file to the desktop Because the Gmail add-in works with Firefox, the pfx file must be saved to the desktop (or to any other location) before it can be imported into Firefox.

2. Open the certificate manager Open the Firefox options dialog from the Firefox menu (**Tools→Options**[15]). Select the *Advanced settings* and select the *Certificates* tab (see figure 38). Now click *View Certificates*. The *Certificate Manager* will now be opened (see figure 39).



Protocols

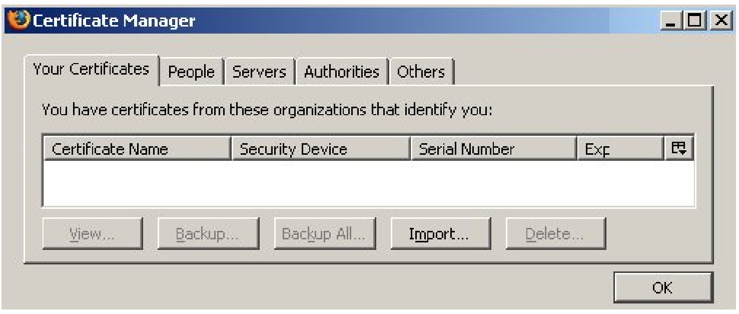
☑ Use SSL 3.0 ☑ Use TLS 1.0

Certificates

When a server requests my personal certificate:

○ Select one automatically ● Ask me every time

Figure 38: Firefox certificates options



You have certificates from these organizations that identify you:

Certificate Name	Security Device	Serial Number	Exp

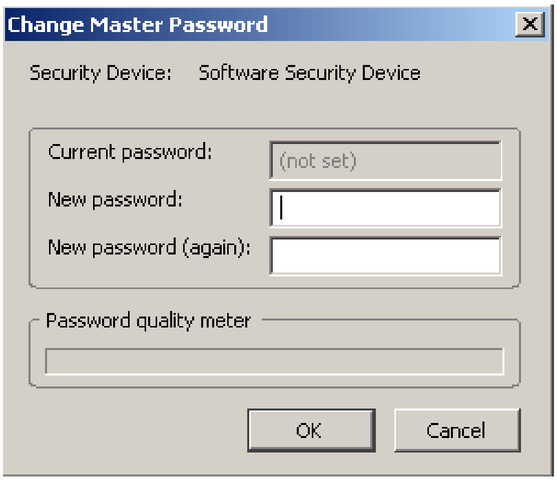
Figure 39: Firefox certificate manager

3. Import the pfx On the *Certificate Manager* select the *Your Certificates* tab, click the *Import* button and select the pfx file which was previously saved in step 1.

[15] On some Firefox versions the options dialog should be opened with **Edit→Preferences**

4. Set the master password The first time a certificate is added to Firefox the *Master Password* for the key store should be set (see figure 40). The master password is used to protect the private keys which are stored in Firefox. The private keys are encrypted with the *Master Password* to ensure that only the owner can access the private keys.

Note: this is NOT the password of the pfx file from step 1! A secure master password should be selected by the computer owner or administrator. If the master password was already set, the master password should be entered before a new certificate can be imported.



Change Master Password

Security Device: Software Security Device

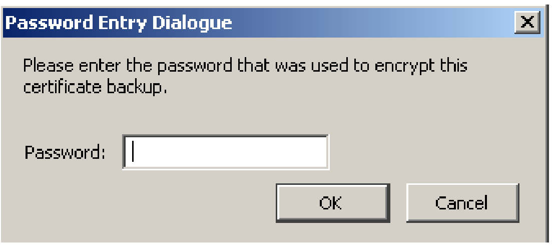
Current password: (not set)

New password:

New password (again):

Figure 40: Firefox master password

5. Enter the pfx password The password for the pfx file should now be entered (see figure 41. This is the password that was provided via an SMS Text message or provided by other means. Clicking *OK* will start the import process.



Password Entry Dialogue

Please enter the password that was used to encrypt this certificate backup.

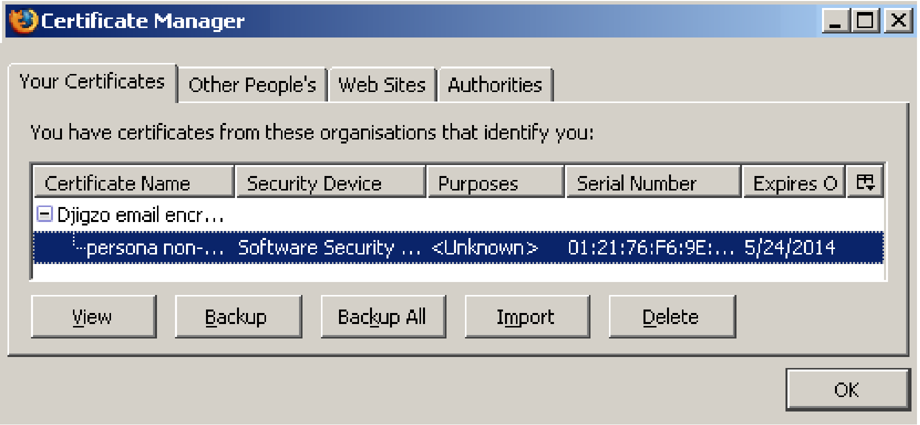
Password:

Figure 41: Firefox password entry dialog

6. Lookup the name of the imported root The imported root certificate is not yet enabled for S/MIME. Before the root certificate can be enabled for

S/MIME the name of the root certificate should be looked up first. Open the *Certificate Manager*, select the *Your Certificates* tab and select the certificate that was just imported (see figure 42).

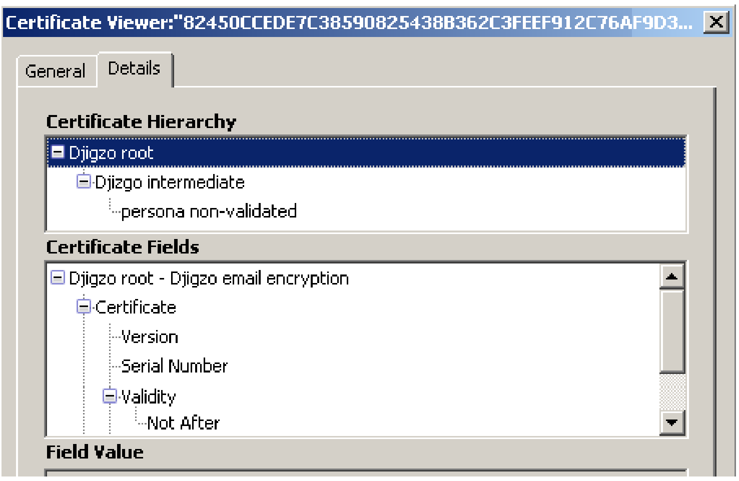
Double click the certificate to open the certificate details page (see figure 43). The first entry in the *Certificate Hierarchy* is the root certificate. The name of the root certificate is needed in the following steps.



You have certificates from these organisations that identify you:

Certificate Name	Security Device	Purposes	Serial Number	Expires O
Djigzo email encr…				
persona non-…	Software Security …	<Unknown>	01:21:76:F6:9E:…	5/24/2014

Figure 42: Firefox manager your certificates


Certificate Viewer:"82450CCEDE7C38590825438B362C3FEEF912C76AF9D3...
General
Details

Certificate Hierarchy

Djigzo root
Djizgo intermediate
persona non-validated

Certificate Fields

Djigzo root - Djigzo email encryption
Certificate
Version
Serial Number
Validity
Not After

Field Value

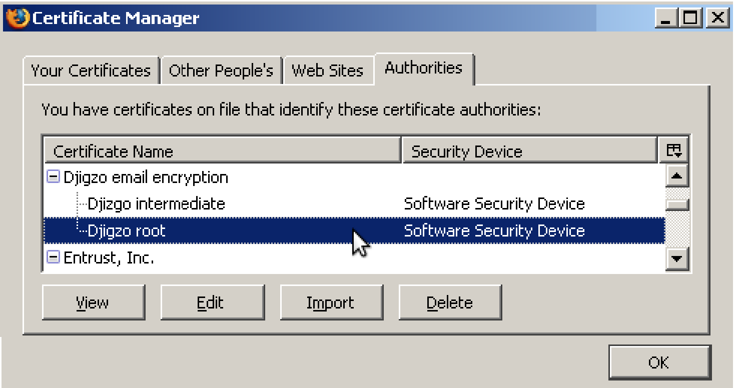
Figure 43: Firefox certificate details

7. Enable the imported root for S/MIME Open the *Certificate Manager* and select the *Authorities* tab (see figure 44). Select the root certificate from step 6 and click the *Edit* button to open the *Edit CA certificate trust settings* page.

On the *Edit CA certificate trust settings* page, select “This certificate can identify mail users” to enable the root certificate for S/MIME (see figure 45). Click

OK and close all dialogs.

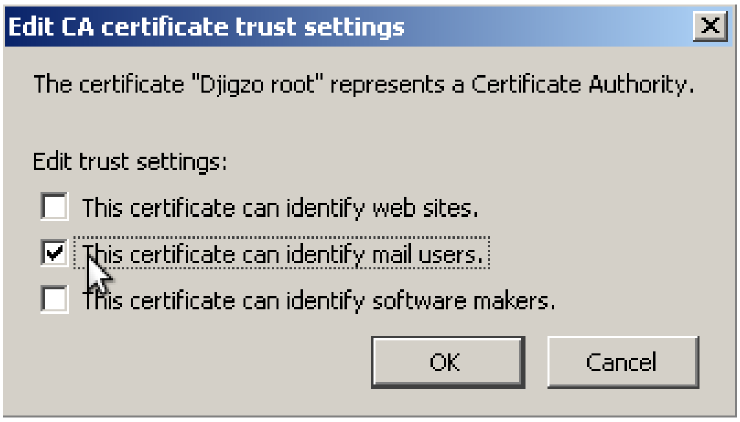
Gmail is now ready for sending and receiving signed and encrypted email.



You have certificates on file that identify these certificate authorities:

Certificate Name	Security Device
Djigzo email encryption	
Djizgo intermediate	Software Security Device
Djigzo root	Software Security Device
Entrust, Inc.	

Figure 44: Firefox authorities



The certificate "Djigzo root" represents a Certificate Authority.

Edit trust settings:

☐ This certificate can identify web sites.

☑ This certificate can identify mail users.

☐ This certificate can identify software makers.

Figure 45: Firefox CA certificate trust settings

4.5.3 Sending signed and encrypted email

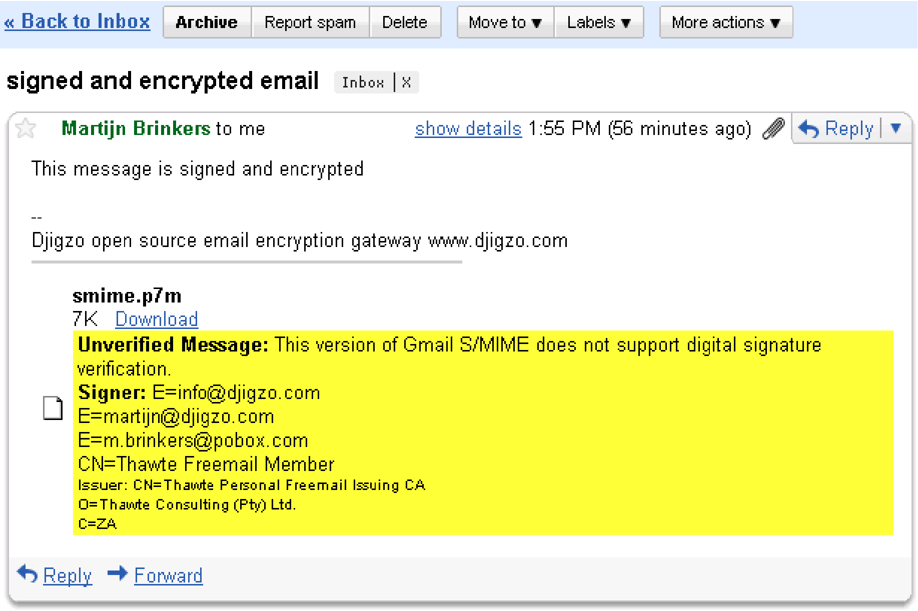
An example of a signed an encrypted email in Gmail is shown in figure 46.

Note: The Gmail S/MIME add-in currently does not verify digital signatures.

4.5.4 Sending signed and encrypted email

A message can be signed and encrypted by selecting the sign and encrypt option (see figure 47).

Click *Send* to sign, encrypt and send the message. When a message is signed



signed and encrypted email

Martijn Brinkers to me 1:55 PM (56 minutes ago)

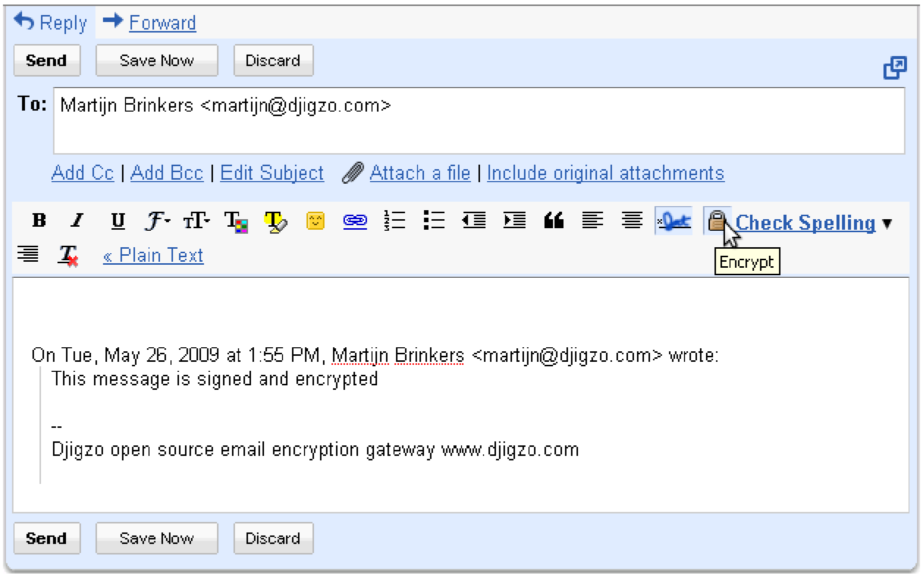
This message is signed and encrypted

--
Djigzo open source email encryption gateway www.djigzo.com

smime.p7m
7K Download

Unverified Message: This version of Gmail S/MIME does not support digital signature verification.
Signer: E=info@djigzo.com
E=martijn@djigzo.com
E=m.brinkers@pobox.com
CN=Thawte Freemail Member
Issuer: CN=Thawte Personal Freemail Issuing CA
O=Thawte Consulting (Pty) Ltd.
C=ZA

Figure 46: Gmail signed and encrypted



To: Martijn Brinkers <martijn@djigzo.com>

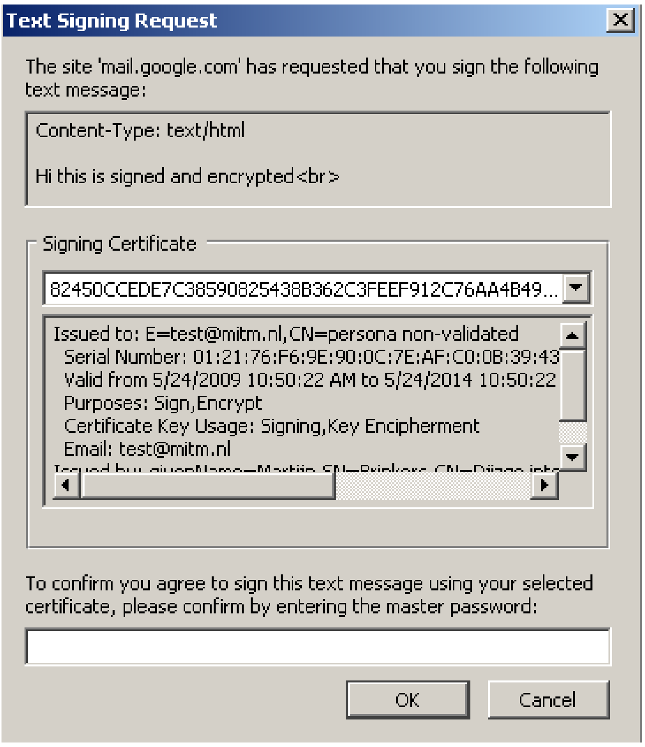
On Tue, May 26, 2009 at 1:55 PM, Martijn Brinkers <martijn@djigzo.com> wrote:
> This message is signed and encrypted
>
> --
> Djigzo open source email encryption gateway www.djigzo.com

Figure 47: Gmail sign and encrypt options

a confirmation dialog will pop-up asking to confirm the signing of the message (see figure 48).

To confirm the signing the master password from step 4 must be entered.

After clicking OK a pop-up dialog will be shown on which the Gmail password



The site 'mail.google.com' has requested that you sign the following text message:

```
Content-Type: text/html

Hi this is signed and encrypted<br>
```

Signing Certificate

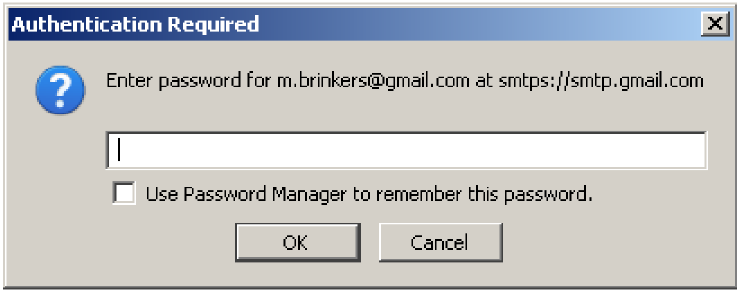
82450CCEDE7C38590825438B362C3FEEF912C76AA4B49...

```
Issued to: E=test@mitm.nl,CN=persona non-validated
  Serial Number: 01:21:76:F6:9E:90:0C:7E:AF:C0:0B:39:43
  Valid from 5/24/2009 10:50:22 AM to 5/24/2014 10:50:22
  Purposes: Sign,Encrypt
  Certificate Key Usage: Signing,Key Encipherment
  Email: test@mitm.nl
Issued by: givenName=Martijn,SN=Brinkers,CN=Dijzgo info
```

To confirm you agree to sign this text message using your selected certificate, please confirm by entering the master password:

Figure 48: Gmail sign confirmation

should be entered (see figure 49). The Gmail add-in sends the signed and encrypted message via the Gmail SMTP servers. The Gmail password is required for sending the message via the Gmail SMTP servers.



Enter password for m.brinkers@gmail.com at smtps://smtp.gmail.com

□ Use Password Manager to remember this password.

Figure 49: Gmail SMTP password

4.5.5 Notes

The Gmail S/MIME add-in has some shortcomings compared to S/MIME support in other mail clients.

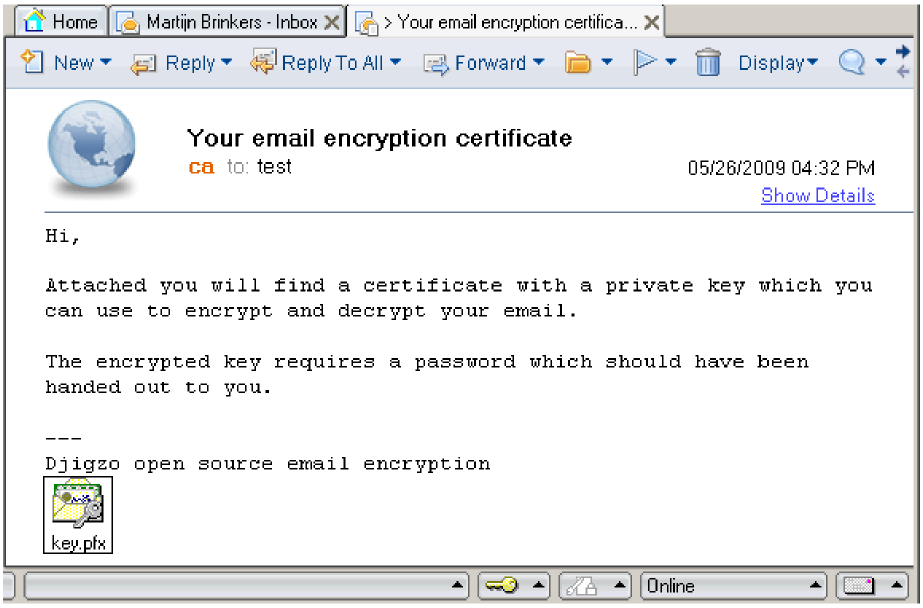
- Signatures are not verified.

- Drafts are not stored securely.

For more information see http://richard.jones.name/google-hacks/gmail-smime/gmail-smime.html.

4.6 Lotus Notes

A Lotus Notes recipient receives a message with the password encrypted pfx file as an attachment (see figure 50).



Your email encryption certificate

ca to: test

05/26/2009 04:32 PM

```
Hi,

Attached you will find a certificate with a private key which you
can use to encrypt and decrypt your email.

The encrypted key requires a password which should have been
handed out to you.

---
Djigzo open source email encryption
```

key.pfx

Figure 50: Lotus Notes pfx attachment

4.6.1 Importing the pfx attachment

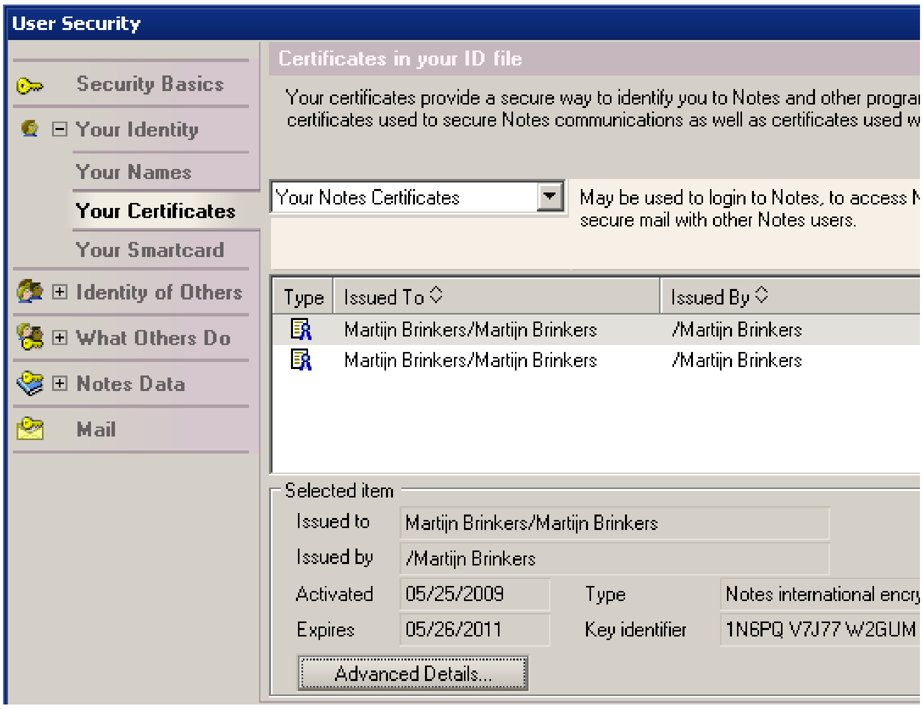
The pfx file can be imported with the following procedure:

1. Save the pfx file to the desktop.
2. Open the *User Security* settings.
3. Import Internet Certificates.
4. Enter the pfx password.
5. Accept all certificates.

These steps will now be explained in more detail.

1. Save the pfx file to the desktop The pfx attached to the messages should be saved before the pfx can be imported. The the key.pfx attachment should be saved to the desktop (or to any other location normally used for attachments).

2. Open the *User Security* settings Open the *User Security* settings page from main menu **File**→**Security**→**User Security...** (see figure 51).



Your certificates provide a secure way to identify you to Notes and other progra
certificates used to secure Notes communications as well as certificates used w

Your Notes Certificates ▾ May be used to login to Notes, to access N
secure mail with other Notes users.

Type	Issued To	Issued By
	Martijn Brinkers/Martijn Brinkers	/Martijn Brinkers
	Martijn Brinkers/Martijn Brinkers	/Martijn Brinkers

Selected item
Issued to Martijn Brinkers/Martijn Brinkers
Issued by /Martijn Brinkers
Activated 05/25/2009 Type Notes international encry
Expires 05/26/2011 Key identifier 1N6PQ V7J77 W2GUM

Figure 51: Lotus Notes Your Certificates

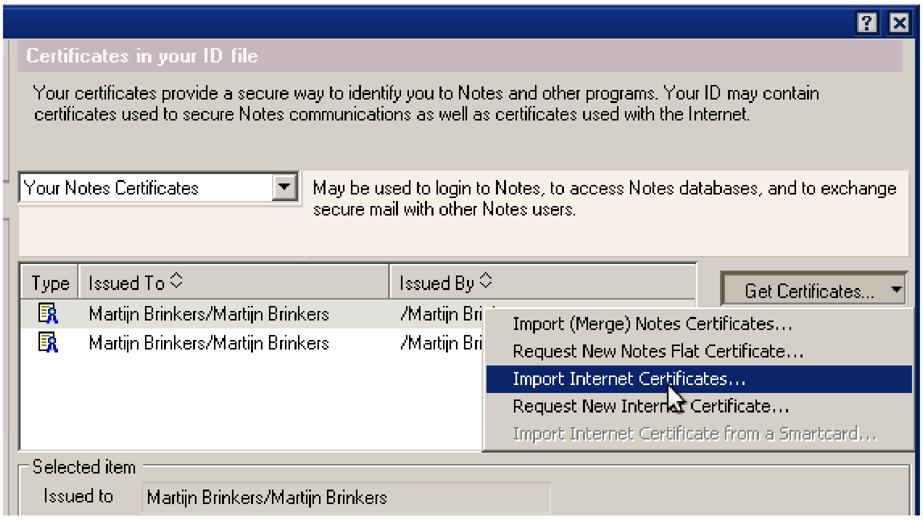
3. Import Internet Certificates On the *User Security* page, select **Your Identity**→**Your Certificates** and click *Get Certificates* and select *Import Internet Certificates* from the pull-down menu (see figure 52). Select the pfx file which was saved in step 1. A pop-up dialog opens in which the file format of the file to import should be selected (see figure 53). Select *PKCS 12 encoded* and click *Continue*.

4. Enter the pfx password The password for the pfx file should now be entered (see figure 54. This is the password that was provided via an SMS Text message or provided by other means. Clicking *OK* will start the import process.

5. Accept all certificates The import wizard will now be opened listing all certificates which will be imported (see figure 55). Click *Accept All* to start importing all the certificates.

4.6.2 Receiving signed and encrypted email

The first time a signed and encrypted message is received by Lotus Notes, the signer certificates should be *Cross certified*. Click *Cross certify* to approve the



Certificates in your ID file

Your certificates provide a secure way to identify you to Notes and other programs. Your ID may contain certificates used to secure Notes communications as well as certificates used with the Internet.

Your Notes Certificates ▾ May be used to login to Notes, to access Notes databases, and to exchange secure mail with other Notes users.

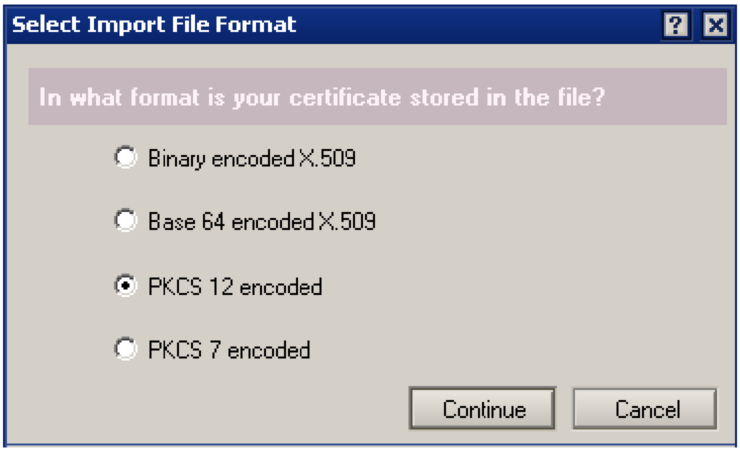
Type	Issued To	Issued By
	Martijn Brinkers/Martijn Brinkers	/Martijn Bri
	Martijn Brinkers/Martijn Brinkers	/Martijn Bri

Get Certificates... ▾
Import (Merge) Notes Certificates...
Request New Notes Flat Certificate...
Import Internet Certificates...
Request New Internet Certificate...
Import Internet Certificate from a Smartcard...

Selected item

Issued to Martijn Brinkers/Martijn Brinkers

Figure 52: Lotus Notes Import Internet Certificates



Select Import File Format

In what format is your certificate stored in the file?

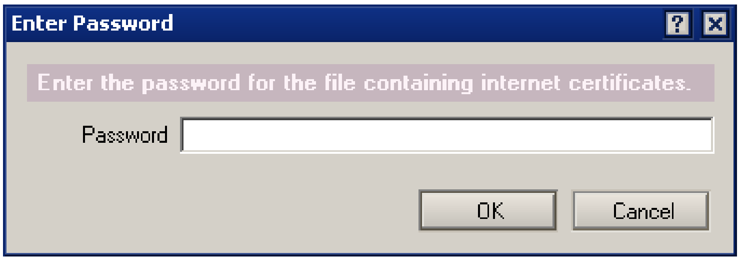
○ Binary encoded X.509

○ Base 64 encoded X.509

● PKCS 12 encoded

○ PKCS 7 encoded

Figure 53: Lotus Notes Import File Format



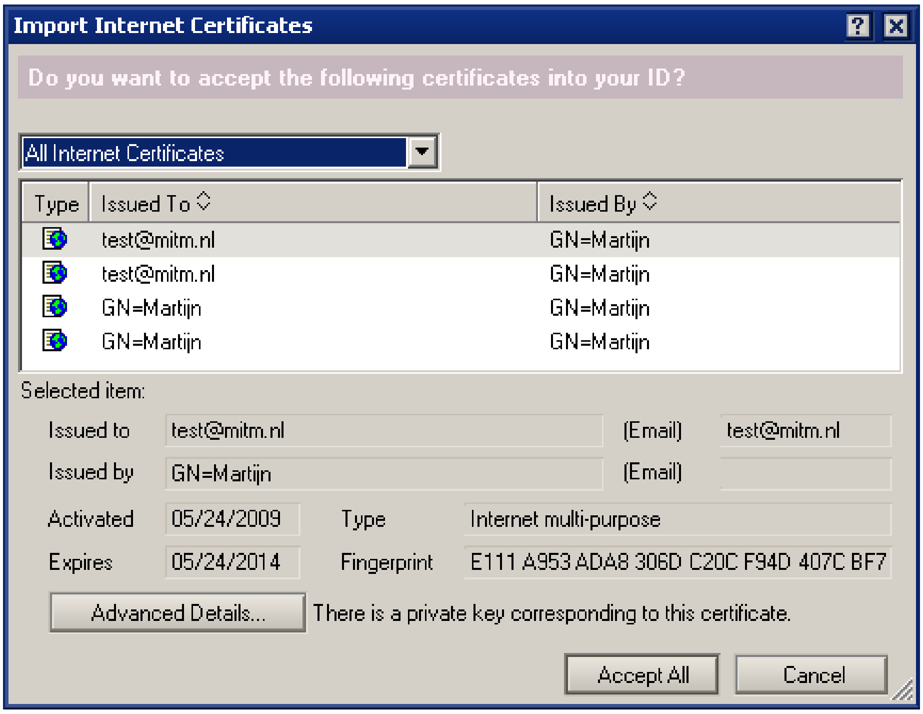
Enter Password

Enter the password for the file containing internet certificates.

Password

Figure 54: Lotus Notes PFX password

certificate (see figure 56).



Import Internet Certificates

Do you want to accept the following certificates into your ID?

All Internet Certificates

Type	Issued To	Issued By
	test@mitm.nl	GN=Martijn
	test@mitm.nl	GN=Martijn
	GN=Martijn	GN=Martijn
	GN=Martijn	GN=Martijn

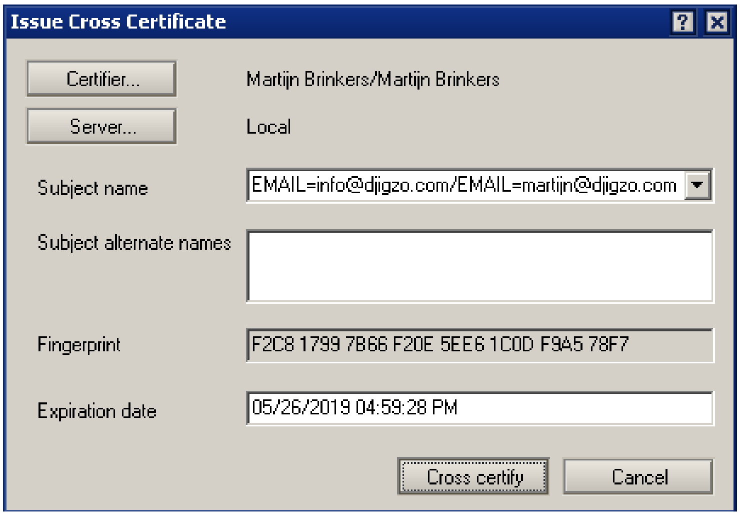
Selected item:

Issued to	test@mitm.nl	(Email)	test@mitm.nl
Issued by	GN=Martijn	(Email)	
Activated	05/24/2009	Type	Internet multi-purpose
Expires	05/24/2014	Fingerprint	E111 A953 ADA8 306D C20C F94D 407C BF7

There is a private key corresponding to this certificate.

Figure 55: Lotus Notes confirm import

Note: A certificate only need to be cross certified once.

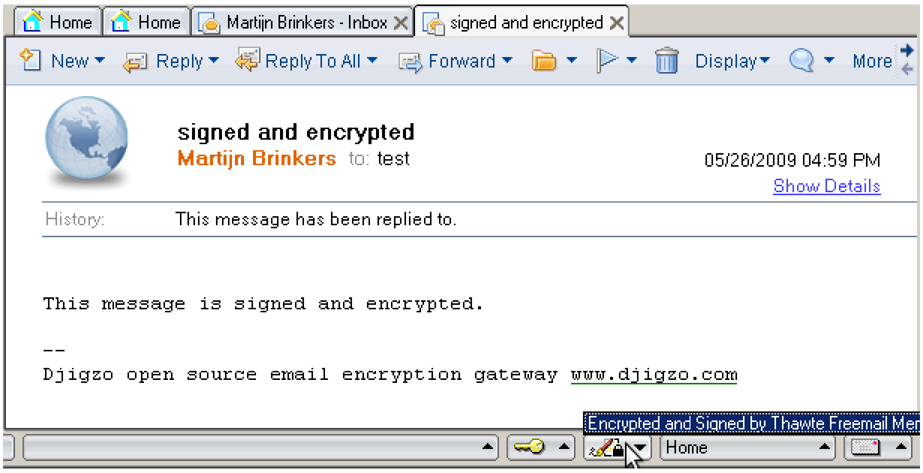


Issue Cross Certificate

Certifier...	Martijn Brinkers/Martijn Brinkers
Server...	Local
Subject name	EMAIL=info@djigzo.com/EMAIL=martijn@djigzo.com
Subject alternate names	
Fingerprint	F2C8 1799 7B66 F20E 5EE6 1C0D F9A5 78F7
Expiration date	05/26/2019 04:59:28 PM

Figure 56: Lotus Notes Cross Certify

A signed and encrypted email can be recognized by clicking the *Security* icon (see figure 57). This opens a pop-up page showing the security details of the message.



signed and encrypted
Martijn Brinkers to: test
05/26/2009 04:59 PM
Show Details

History: This message has been replied to.

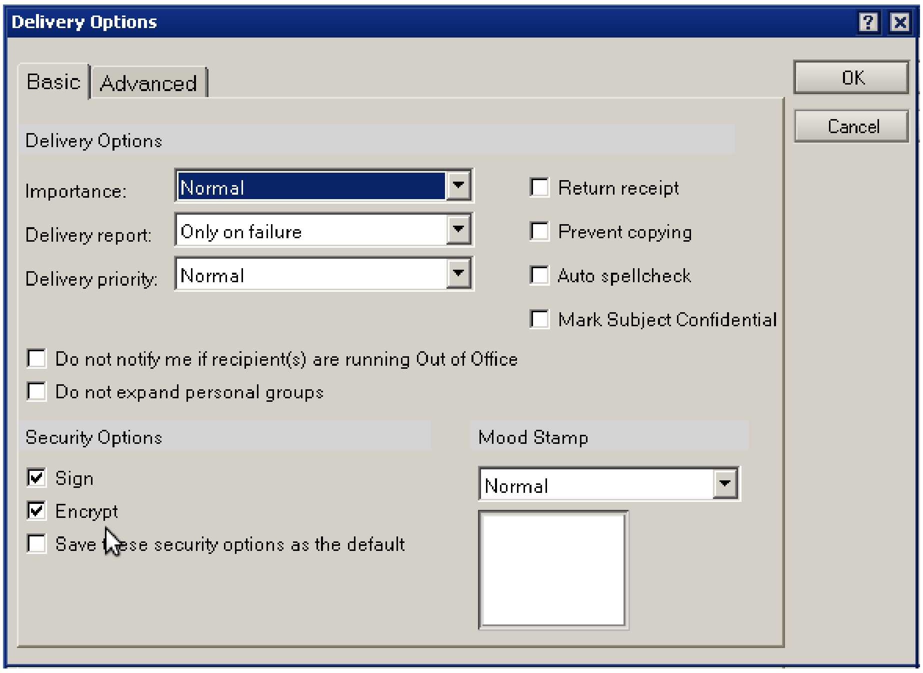
```
This message is signed and encrypted.

--
Djigzo open source email encryption gateway www.djigzo.com
```

Encrypted and Signed by Thawte Freemail Mer

Figure 57: Lotus Notes signed and encrypted

4.6.3 Sending signed and encrypted email

A message can be signed and encrypted by selecting the *Sign* and *Encrypt* options on the *Delivery Options* page (see figure 58). The message will be signed and encrypted when the message will be sent.



Delivery Options

Importance: Normal

Delivery report: Only on failure

Delivery priority: Normal

□ Return receipt
□ Prevent copying
□ Auto spellcheck
□ Mark Subject Confidential

□ Do not notify me if recipient(s) are running Out of Office
□ Do not expand personal groups

Security Options

☑ Sign
☑ Encrypt
□ Save these security options as the default

Mood Stamp

Normal

Figure 58: Lotus Notes delivery options

A DJIGZO S/MIME headers

When an incoming email is handled by DJIGZO, special headers about the security properties of the email are automatically added to the email. For example, if an encrypted message sent to an internal users is decrypted by DJIGZO relevant information about the encryption algorithm and recipients is added to the header. Because the message is decrypted by DJIGZO the message is no longer encrypted. The internal recipient can therefore not see that the message was encrypted. DJIGZO therefore adds some security related headers that can be used to check if the message was encrypted and or signed.

The following headers will be added:

```
X-Djigzo-Info-Signer-ID -*
X-Djigzo-Info-Signer-Verified-*
X-Djigzo-Info-Signer-Trusted -*
X-Djigzo-Info-Signer-Trusted-Info-*
X-Djigzo-Info-Encryption-Algorithm -*
X-Djigzo-Info-Encryption-Recipient -*
```

Note: The * is replaced with an index and level as explained below.

```
[INDEX-]LEVEL
```

where INDEX and LEVEL are integer numbers starting at 0. INDEX is not used for all headers (optional).

Example:

```
X-Djigzo-Info-Signer-ID-0-0
```

LEVEL denotes the S/MIME level the values applies to. An S/MIME message supports multiple nested levels of protection (CMS layers). For example, a message can first be signed and then encrypted. LEVEL 0 is the first level found by the S/MIME handler. Multiple items can exist within one level. For example, a message can be encrypted for multiple recipients. INDEX is the index of an item within a level.

Example Headers:

```
X-Djigzo-Info-Encryption-Algorithm-0: AES128, Key size: 128

X-Djigzo-Info-Encryption-Recipient-0-0:
   CN=Thawte Personal Freemail Issuing CA, O=Thawte Consulting (Pty) Ltd.,
   C=ZA/6B55D312FF5F9D5DAD9866FF827FFEB5//1.2.840.113549.1.1.1

X-Djigzo-Info-Encryption-Recipient-1-0:
   EMAILADDRESS=support@cacert.org, CN=CA Cert Signing Authority,
   OU=http://www.cacert.org, O=Root CA/6683C//1.2.840.113549.1.1.1

X-Djigzo-Info-Signer-ID-0-1: CN=UTN-USERFirst-Client Authentication and Email,
    OU=http://www.usertrust.com, O=The USERTRUST Network, L=Salt Lake City,
    ST=UT, C=US/88F9874A02A53042E0228D78CBD55795/

X-Djigzo-Info-Signer-Verified-0-1: True

X-Djigzo-Info-Signer-Trusted-0-1: True
```

The example headers shows that the message was first signed and then encrypted. The encryption algorithm was AES128. The message was encrypted with two certificates:

```
X-Djigzo-Info-Encryption-Recipient-0-0
X-Djigzo-Info-Encryption-Recipient-1-0
```

One certificate was issued by Thawte and the other was issued by CACert. The message was signed by one signer with a certificate issued by Usertrust.

X-Djigzo-Info-Signer-Verified This headers shows whether the message content was signed and whether the message has not been changed after signing (tampered).

X-Djigzo-Info-Signer-Trusted This headers shows whether the signing certificate was trusted (signed by root etc.) by the gateway. If the signing certificate was not trusted, the reason for not trusting the certificate is given in the X-Djigzo-Info-Signer-Trusted header.

Note: When email is received by DJIGZO and delivered to an internal user, it will remove all X-Djigzo-* headers to make sure that an external sender cannot fake any DJIGZO specific headers.

B Links

Outlook

Using S/MIME in Microsoft Outlook http://searchexchange.techtarget.com/generic/0,,sid43_gci1252311,00.html

Installing and using your certificate in Microsoft Outlook 2003 http://www.globalsign.com/support/personal-certificate/per_outlook03.html

Overview of certificates and cryptographic e-mail messaging in Outlook http://office.microsoft.com/en-us/outlook/HP012305341033.aspx?pid=CH100622191033

Configuring S/MIME Security with Outlook Web Access 2003 http://www.msexchange.org/tutorials/Configuring-SMIME-Security-Outlook-Web-Access-2003.html

Implementing Outlook Web Access with the S/MIME Control http://technet.microsoft.com/en-us/library/aa998939(EXCHG.65).aspx

Apple

How to Use a Secure Email Signing Certificate (Digital ID) http://support.apple.com/kb/TA22353?viewlocale=en_US

S/MIME for Apple Mail http://joar.com/certificates/

Webmail

Gmail http://richard.jones.name/google-hacks/gmail-smime/gmail-smime.html