
# Crypto Anywhere - OpenPGP Edition

# User Manual

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# 1 Introduction

## 1.1 What is Crypto Anywhere ?

### Secure email in an incredibly small package!


**Don't be a Glass Citizen!**
**Protect your privacy with Crypto Anywhere.**
**Advantages at a glance...**

- Strong encryption
- Small, fast and portable
- Supports public key encryption and password based encryption
- Message recipients do not need Crypto Anywhere to read self decrypting messages
- New : OpenPGP support, compatible with PGP ™ 8.0
- New : Themes support for application skins
- New : Direct deposit of messages keeps your ISP from reading your mail
- New : Automatically creates a travel floppy or USB drive for use in internet cafés
- New : Microsoft Outlook Express ™ Integration
- New : Microsoft Outlook Office 2000/2002 ™ Integration

| | |
|---|---|
| ***The Sydney Morning Herald :*** *Australia, May 10th, 2003* | *Two words: "portability" and "privacy"* |
| ***News24.com :*** *South Africa, May 2nd, 2003* | *If you need to send confidential e-mail, try Crypto Anywhere for size.* |
| ***Telegraph :*** *United Kingdom, July 10th, 2003* | Top tip...Crypto Anywhere is a simple-to-use email program with powerful built-in encryption. |
| ***CHIP Magazine Online:*** *Greece* | A practical, portable encryption solution |

*Crypto Anywhere is secure email on the move!* Crypto Anywhere is small enough to fit on a single floppy or USB key chain drive and is very easy to use. Don't have a computer yourself but want to protect your web based e-mail at your local internet cafe? Crypto Anywhere is for you! If you suspect your employer is reading your private email, put an end to that. If you run Crypto Anywhere from a floppy disk or USB drive, you can encrypt your email without even installing software on your workstation. With Crypto Anywhere you can send and receive secure mail to and from anyone with an email account - the recipients do not have to be "crypto savvy" or even have Crypto Anywhere themselves.

Crypto Anywhere implements trusted, industry standard, strong encryption algorithms based on RSA public key encryption, the Twofish block cipher and the ISAAC random number generator. Crypto Anywhere e-mail is compatible with SecExMail based encryption. Version 2.0 and later of Crypto Anywhere support OpenPGP encryption and provide compatibility with PGP Corporation's PGP ™ product.

# 2 Usage

## 2.1 Encrypting Mail 1,2,3

To encrypt mail, open Crypto Anywhere, select *My Messages* on the left, then click the *Compose Message* icon. This will display the compose message view as shown below.


**Step 1:** Specify the recipient(s)

Enter recipient email address.

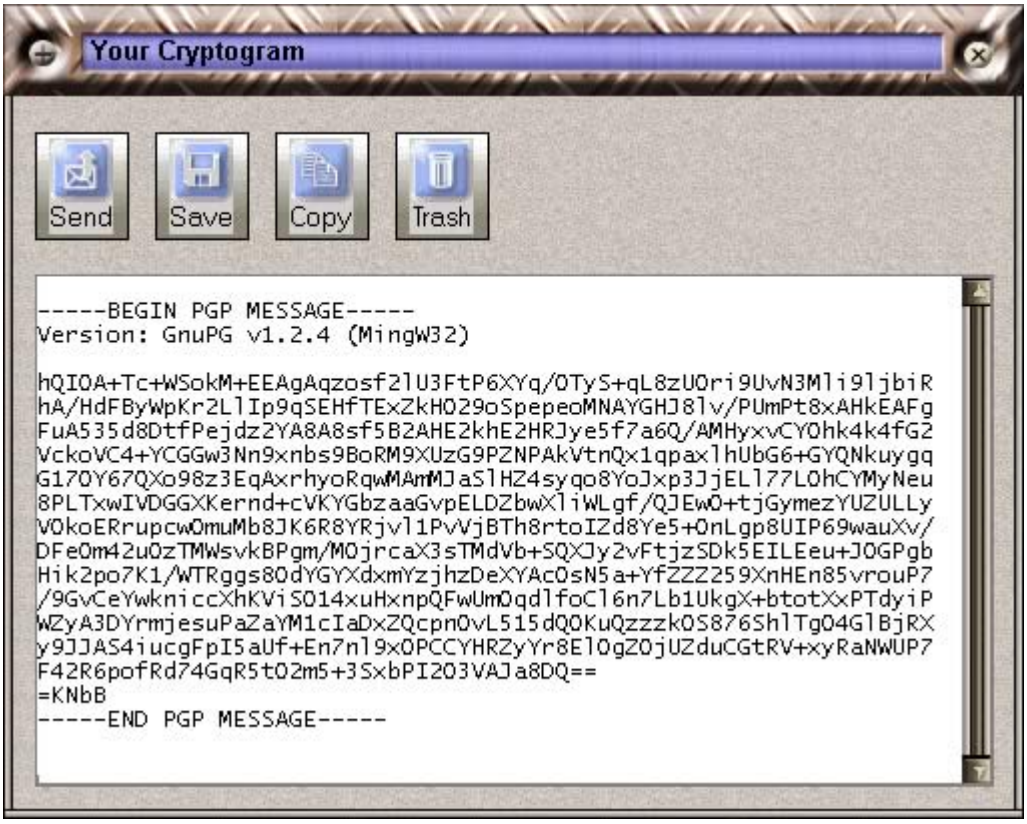
**Step 2:** Enter the subject and your message

If you are a registered user of Crypto Anywhere you may attach documents and files to your

message.

**Step 3:** Encrypt the message

Select "*Encipher*" from the menu or click the encipher button. This will display the encrypted message or cryptogram, ready for sending. Click "*Send*". Depending on the availability of encryption keys, Crypto Anywhere will generate a SecExMail encrypted message, an OpenPGP encrypted message, or a password protected message.




## 2.2 Decrypting Mail 1,2,3

If you have received a Crypto Anywhere message, follow the simple steps outlined below.

**Step 1:** Copy the encrypted message to the Windows clipboard

In your favorite e-mail client or web browser, select the entire encrypted e-mail with your mouse and copy it to the windows clipboard. To do this click above or to the left of the line

*--Begin SecEx 1.1--*

and hold the left mouse button down while scrolling to the end of the page. The entire message should now be highlighted. Now select *Edit*, *Copy* from the menu or use the keyboard shortcut Ctrl-C. This will copy the encrypted message to the Windows clipboard.

If you have received an OpenPGP encrypted message, click above or to the left of the line

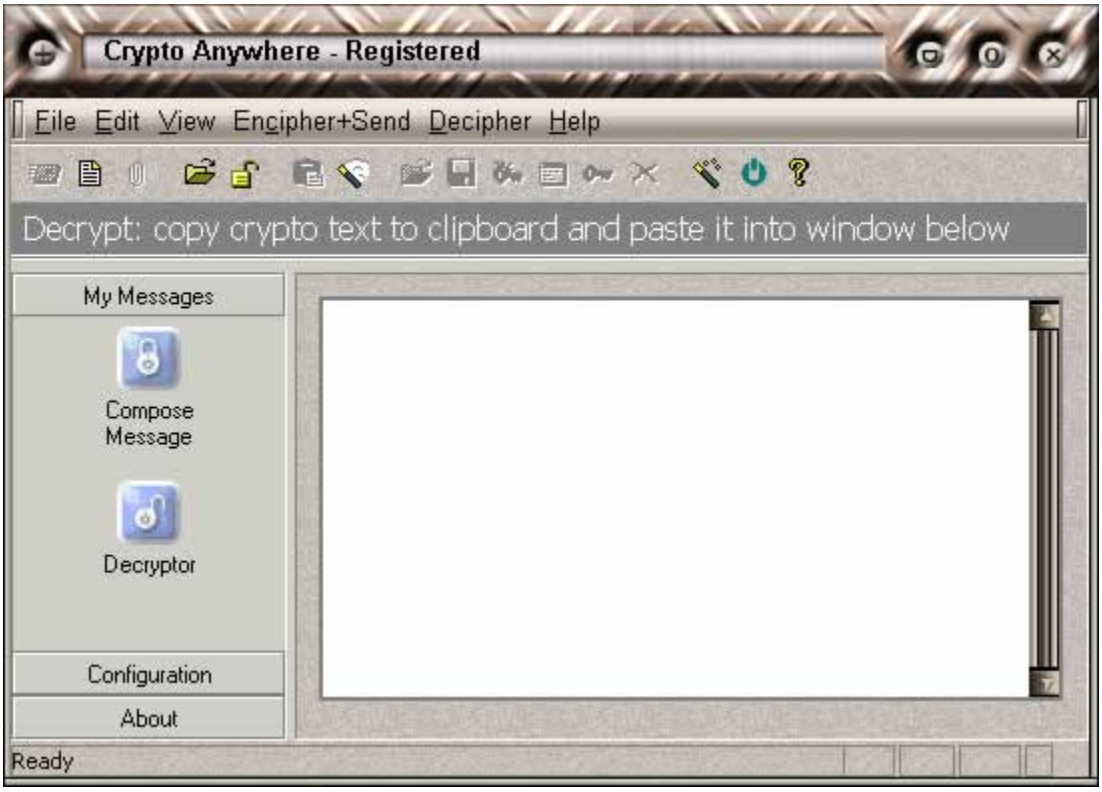
-----BEGIN PGP MESSAGE-----

and hold the left mouse button down while scrolling to the end of the page. The entire message should now be highlighted. Now select *Edit*, *Copy* from the menu or use the keyboard shortcut Ctrl-C. This will copy the encrypted message to the Windows clipboard.

If you have received a self decrypting message, simply follow the instructions in the accompanying email.

**Step 2:** Paste the encrypted message into Crypto Anywhere

Open Crypto Anywhere. Select *My Messages* on the left, then click the *Decryptor* icon. Now click the *Paste* button on the toolbar.

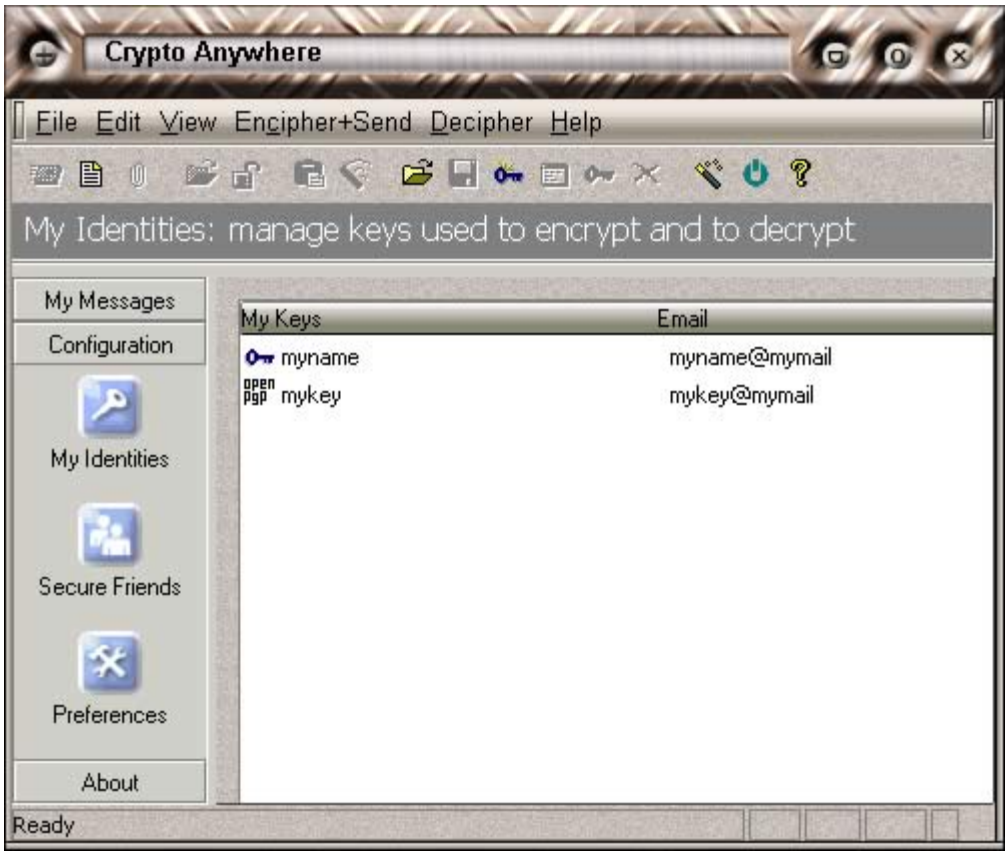



**Step 3:** Decrypt the message

Select "*Decipher*" from the Crypto Anywhere menu or click the decipher button on the toolbar. This will decrypt the message and display the plain text in the message window.

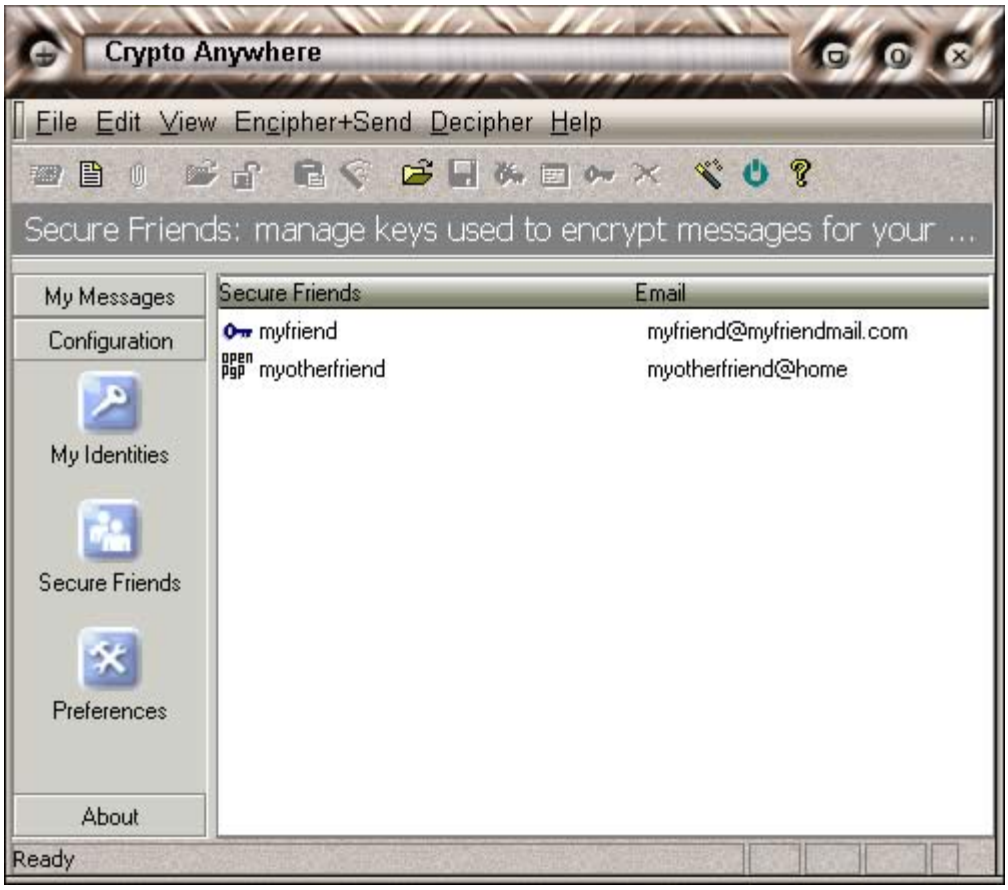

## 2.3 My Identities

The ***My Identities*** screen shows your own SecExMail and OpenPGP keys. From here you can create new keys, change the passphrase on existing keys, back up and restore keys to and from disk.




## 2.4 Secure Friends

The ***Secure Friends*** screen shows people on your secure contact list. On this screen you can add and remove friends from your secure contact list and display key properties including fingerprints. E-mail sent via Crypto Anywhere to people on the secure friends list will be encrypted automatically and without the need for further interaction by you, the user. Crypto Anywhere will automatically select SecExMail mode or OpenPGP mode encryption based on the key type listed for the message recipient. If no key is listed, Crypto Anywhere will default to SecExMail password protected encryption.



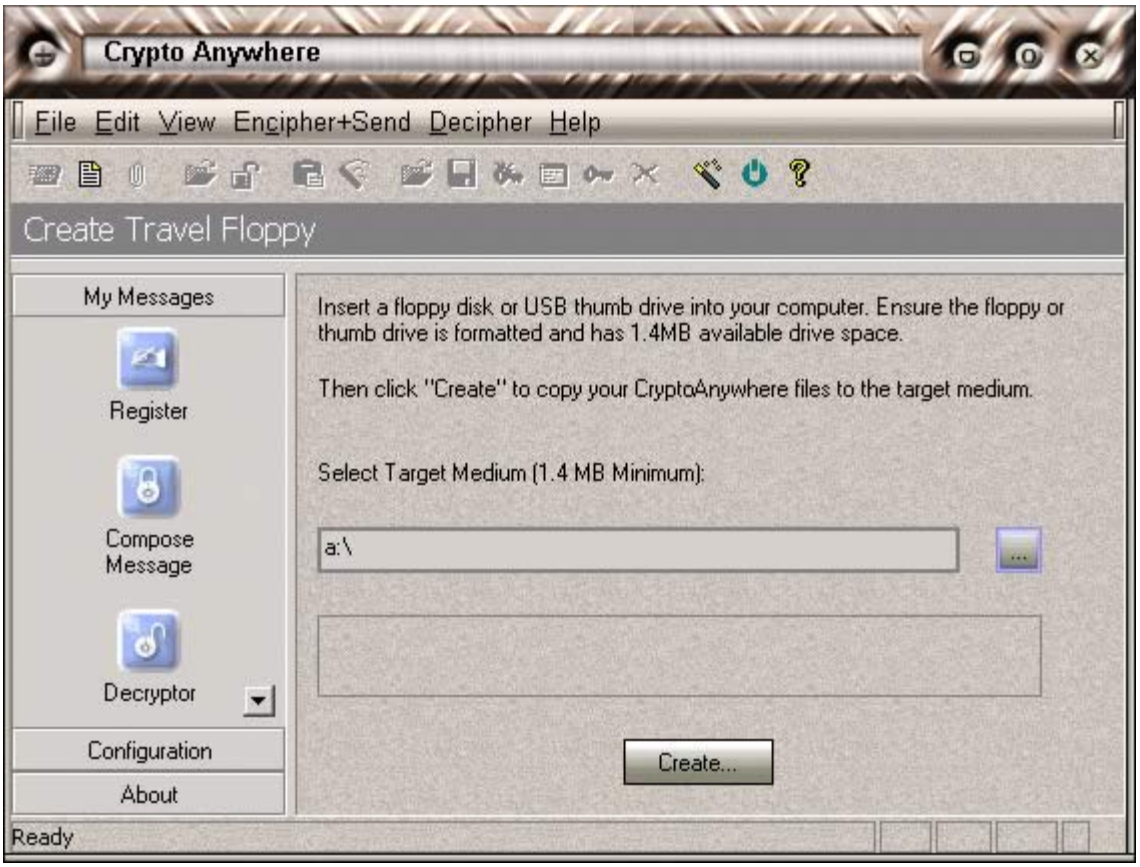

## 2.5 Direct Drop

Direct Drop delivers emails across the internet directly to the recipient's mail box. This feature enhances your privacy because it bypasses your internet service provider's mail server. If you suspect that your internet service provider logs your email messages or you plan to use Crypto Anywhere from internet cafés, Direct Drop is recommended.

Note that some spam filters will discard direct drop e-mails from dial-up links. If your messages are being refused, switch to your usual mail server to send messages.


## 2.6 Create Travel Floppy

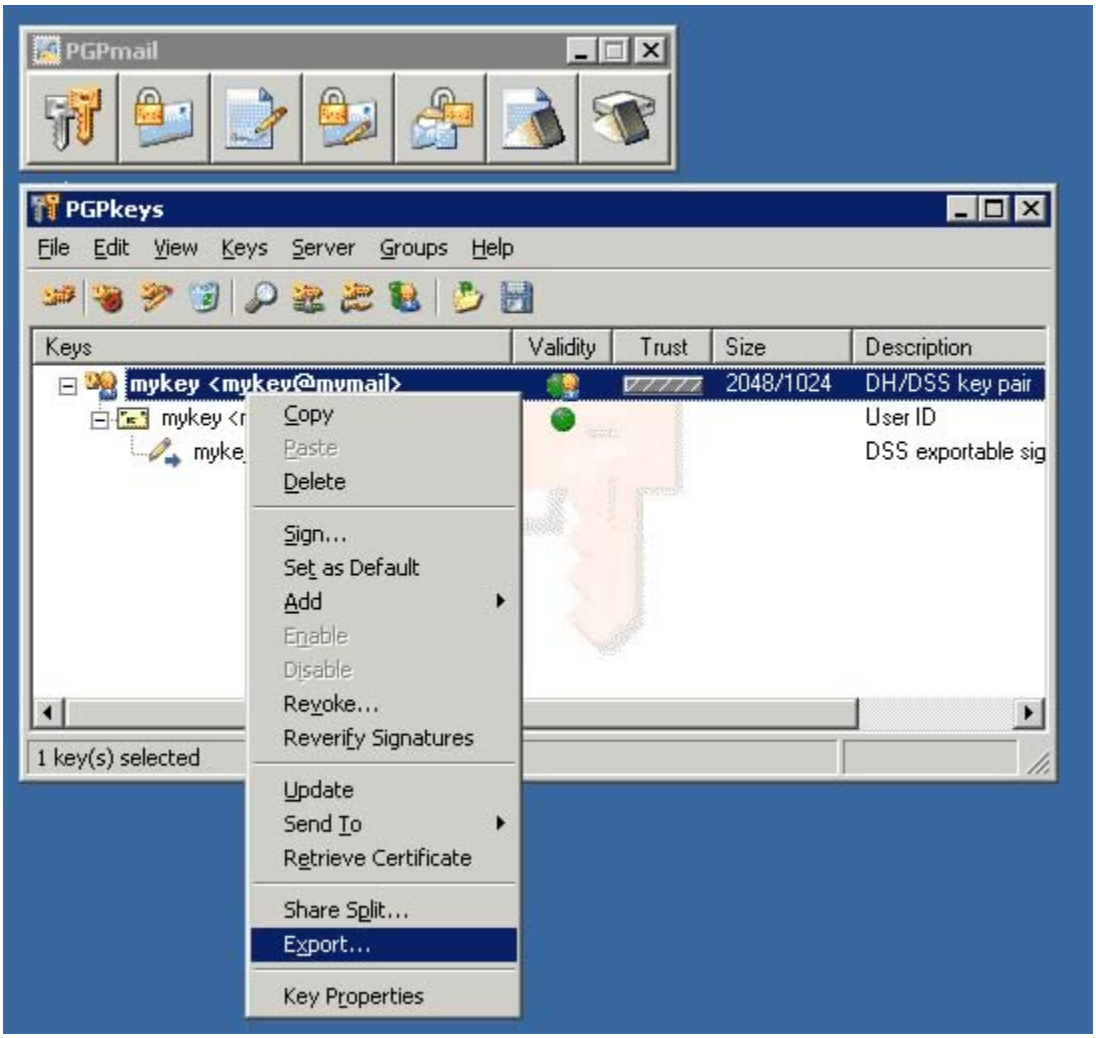
If you have installed Crypto Anywhere on your hard drive and wish to use on a friend's computer or in an internet cafe, you may wish to create a portable installation on a floppy disk, USB drive or similar removable medium. To do this, simply create a travel floppy via the "Create Travel Floppy" screen shown below. Only the files required for portable execution of Crypto Anywhere including your keys and personal configuration files will be copied to the floppy.



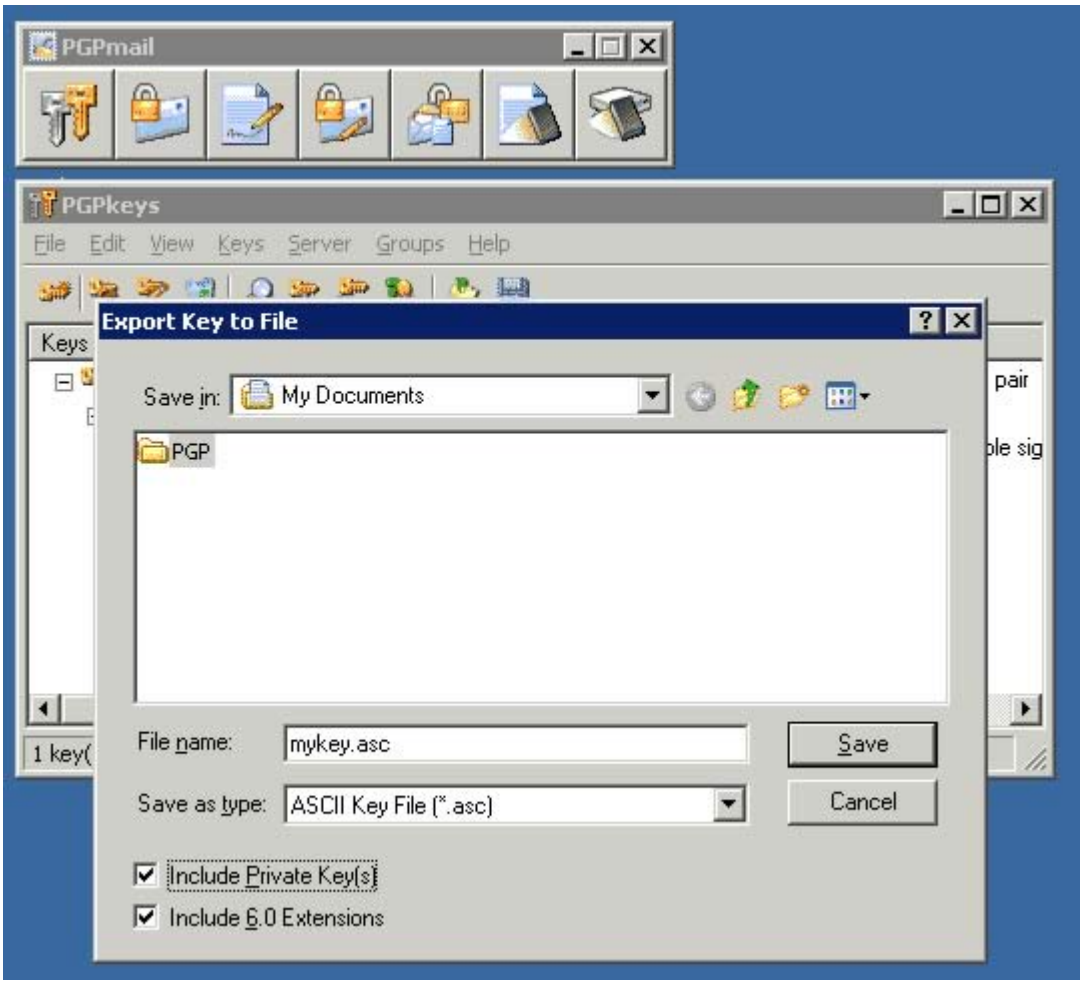

## 2.7 Import PGP (tm) Keys

Version 2.0 and later of Crypto Anywhere support OpenPGP encryption and provide compatibility with PGP Corporation's PGP ™ product. If upgrading from PGP ™ to Crypto Anywhere, you may wish to import your old PGP ™ 8.0 keys and those of your friends. This provides an ideal migration path to the stronger SecExMail cipher also supported by Crypto Anywhere while maintaining backwards compatibility with legacy software. To import your PGP ™ keys, follow the illustrated guide below.

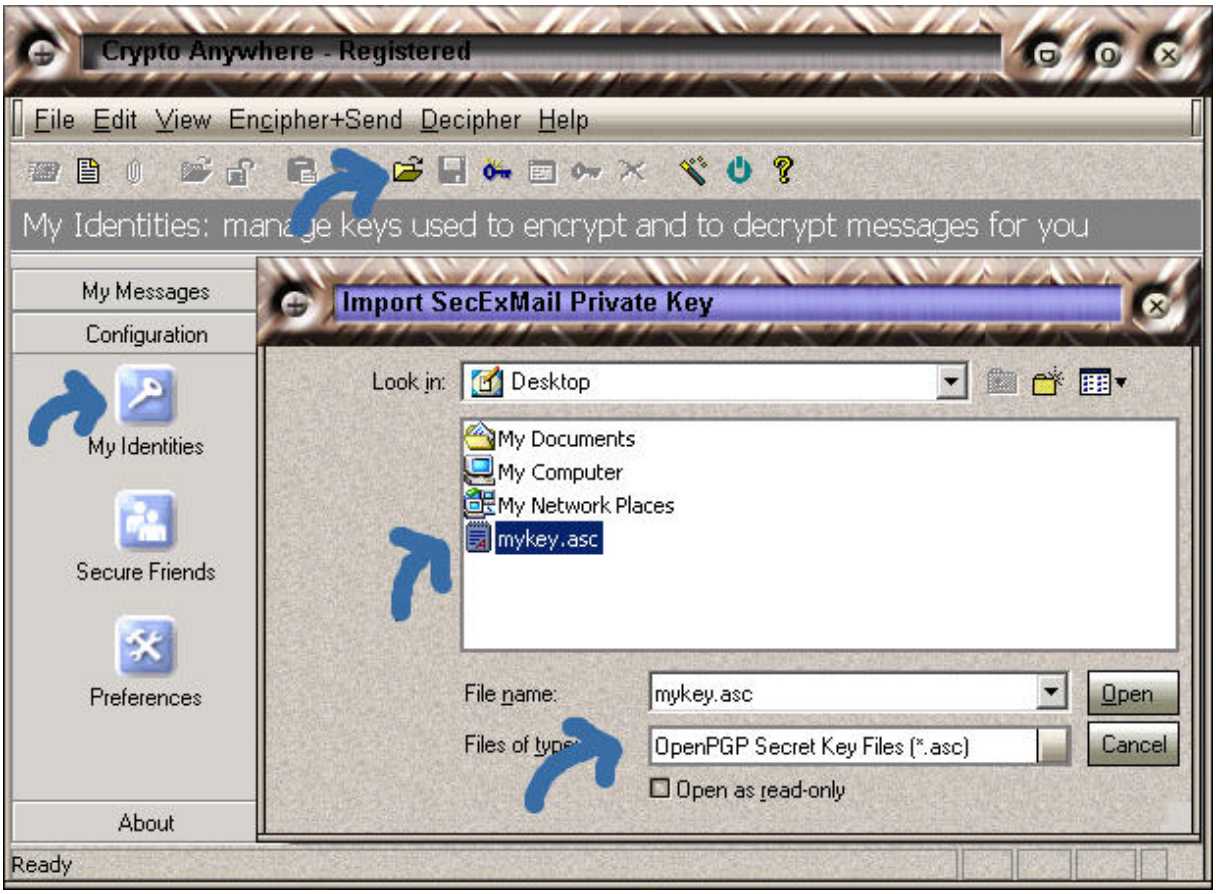
- Open your PGP ™ key chain, select your key and then select the export option.




- Save your key to disk as an ASCII key file and check the "Include Private Key(s)" option as shown below




- In Crypto Anywhere, navigate to the "***My Identities***" screen under "Configuration" on the left tool menu. Then click the open folder icon on the toolbar to activate the "***Import SecExMail Private Key***" dialog. Under "***Files of type***", select "***OpenPGP Secret Key Files***" and navigate to the key file you exported from PGP ™. Now click open.




- Your PGP ™ key will appear in the My Identities screen. In the future you will need only your PGP ™ passphrase to decrypt messages sent to you from your PGP ™ friends.


## 2.8 For your eyes only screen

When sending encrypted e-mail, you will need to specify the recipient(s) of your message. As you receive Crypto Anywhere messages from other people, Crypto Anywhere collects encryption keys from the senders - your secure friends. When sending mail to your secure friends, messages are encrypted so that only your secure friends will be able to read them. You yourself won't be able to decrypt a message encrypted to a secure friend - unless of course you selected your own key for encryption also. You may select one or more keys. Using secure friend keys is the recommended mode of encryption.


In many cases, the intended recipient of a message has not provided you with an encryption key. This will be especially the case when communicating with someone for the first time. In this case simply click "*unlisted email address*". This will select "*Self decrypting e-mail*" as encryption method.


Self decrypting e-mail messages carry an attachment which bundles your encrypted message, the Crypto Anywhere software needed to decrypt the message and any required encryption keys into a self extracting archive. The encryption key required to decode the message is itself stored using 3DES encryption and protected by the passphrase you supply. Therefore you will need to supply the recipient of the message with this passphrase. The ability to receive email attachments will vary from recipient to recipient. Some email clients or email servers block self extracting attachments or block attachments with specific file names or extensions. For this reason you may send self decrypting e-mails in three formats under "*Send As*". The following options are supported :

- default - zip archive
- exe - self extracting executable

- zip - zip archive
- 123 - self extracting executable with ".123" file extension

Request encrypted reply

Check this option if you want to include keys needed to send you encrypted e-mail ( your public keys ).

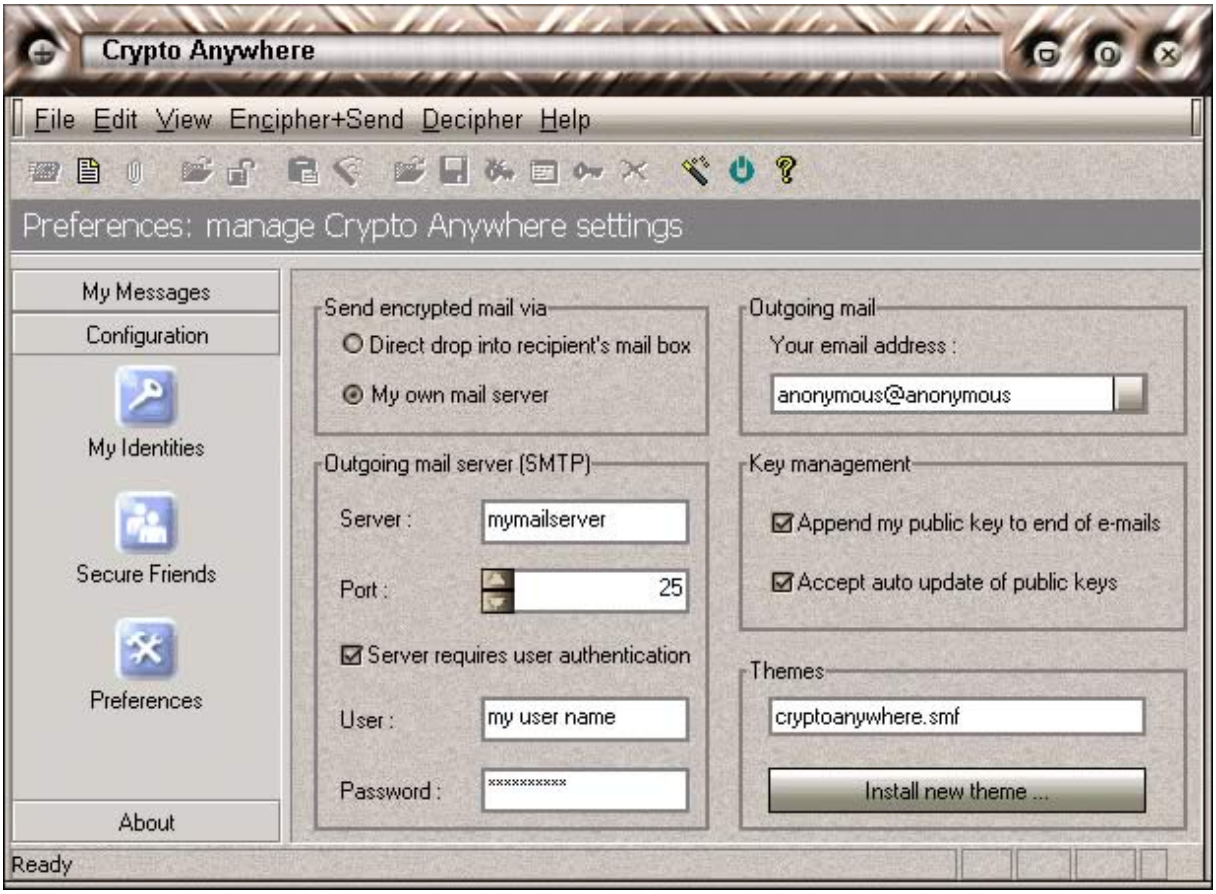
Share secure friends list

Check this option if you want to share your secure friends list with the recipients ( secure friends public keys ).

In most cases you will only have to send a self decrypting email to a particular recipient once. After decrypting and reading your message, the recipient will be given the option to configure Crypto Anywhere immediately and send you encrypted mail in reply.

## 2.9 Preferences

The preferences window allows you to customize the behavior of Crypto Anywhere. See documentation below.



- **Send encrypted mail via**

  Direct drop into recipient's mail box :
  Direct Drop delivers emails across the internet directly to the recipient's mail box. See Direct Drop for details.
  Crypto Anywhere has a built in SMTP module to send e-mail. This allows Crypto Anywhere to send e-mail independently of mail settings of the computer or computers on which it is run. This option is especially useful if you plan to use Crypto Anywhere in internet cafe's. Some service providers do not allow access to their SMTP send mail servers when connecting from other service provider's networks and might require SMTP logon to permit you to send mail. See "*Server requires user authentication*".

  My own mail server :
  This option is recommended if you usually use Crypto Anywhere from the same computer. Simply enter the details of the mail server you ordinarily use for outgoing mail.

- **Outgoing mail server (SMTP) :**

  Server :
  This option is only required in SMTP mode. Please provide the DNS name or IP address of your outgoing mail server.

  Port :
  This option is only required in SMTP mode. Please provide the port number of your outgoing mail server SMTP service. It is safe to leave the default value.

  Server requires user authentication :
  This option is only required in SMTP mode. Some service providers require user logon to permit sending of e-mail. Usually this is the same information as is required for the checking of e-mail. User logon, also called SMTP AUTH, is only available with extended SMTP, or ESMTP.

  User :
  This option is only required in extended SMTP mode with SMTP AUTH. Please enter your user name for your e-mail account.

  Password :
  This option is only required in extended SMTP mode with SMTP AUTH. Please enter your password for your e-mail account.

- **Outgoing mail :**

  Your e-mail address :
  This option specifies your return e-mail address or "*reply-to*" address. By default, the "*reply-to*" e-mail address corresponds to the e-mail address of your default Crypto Anywhere / SecExMail key.

- **Key management :**

  Append my public key to end of e-mails :
  If you check this option, Crypto Anywhere will append your default public key to the end of outgoing messages as a "*tag line*". This enables other users to send encrypted mail to you. You will be added to the secure friends list of other Crypto Anywhere users automatically

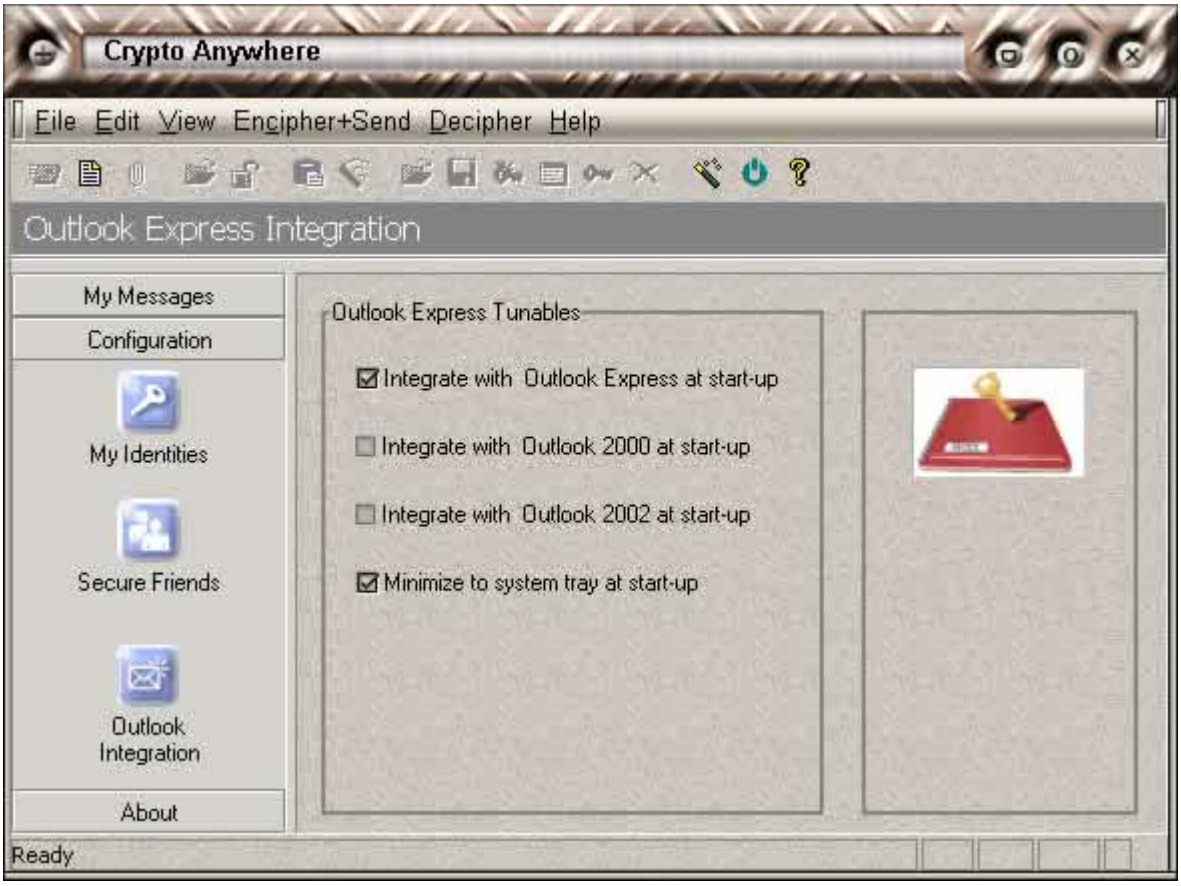
  Accept auto update of public keys :
  If you check this option, Crypto Anywhere will accept new public keys from other people and add them to your secure friends list when ever a key is not found on your secure friends list already. You will be prompted prior to each update.

- **Themes :**

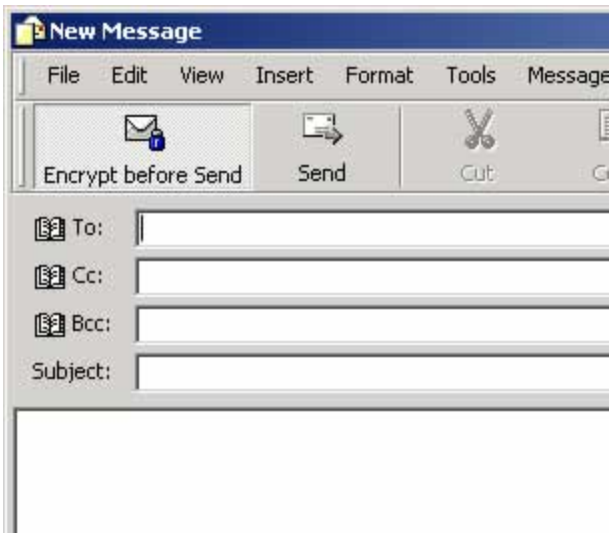
  Crypto Anywhere now supports application skins. Please check www.bytefusion.com for availability.

## 2.10 Microsoft Outlook Express Plug-In

Crypto Anywhere integrates with Microsoft Outlook Express ™ to produce seamless encryption and decryption from within popular email software: You can easily send OpenPGP, SecExMail, as well as password protected messages directly from within your favorite email client. To enable Microsoft Outlook Express ™ support, navigate to the ***Outlook Integration*** screen in the ***Configuration*** section and check the setting "*Integrate with Outlook Express at start-up*". If this option is enabled, Crypto Anywhere will load the Microsoft Outlook Express ™ plug-in at the next start-up. In order for Outlook Express ™ to recognize the plug-in, Crypto Anywhere must be started before Outlook Express ™. If you require continual Crypto Anywhere support from within Outlook Express ™, check the "Minimize to system tray at startup" option. This option pre-loads Crypto Anywhere when you log into Windows, ensuring that Outlook Express ™ always receives encryption support via Crypto Anywhere.




In order to encrypt outgoing messages from within Outlook Express ™, click the "***Encrypt before Send***" button in ***New Message*** window as shown below. When you press ***Send***, Outlook Express ™ will submit the message to Crypto Anywhere for encryption prior to sending the message.




To decrypt mail from within Outlook Express ™, simply click the "Decrypt Message" button in your inbox message window as shown below. You will be able to view the decrypted message in the dedicated Crypto Anywhere message viewer and reply directly to the sender of the message using the encryption method of your choice.


Compatibility

Crypto Anywhere support for Outlook Express ™ has been tested with the following configurations:

- Outlook Express 6.0 and Microsoft Windows 2003 ™
- Outlook Express 6.0 and Microsoft Windows XP ™
- Outlook Express 6.0 and Microsoft Windows 2000 Professional ™
- Outlook Express 6.0 and Microsoft Windows 98 ™
- Outlook Express 5.0 and Microsoft Windows 95 ™
- Outlook Express 5.0 and Microsoft Windows 98 ™

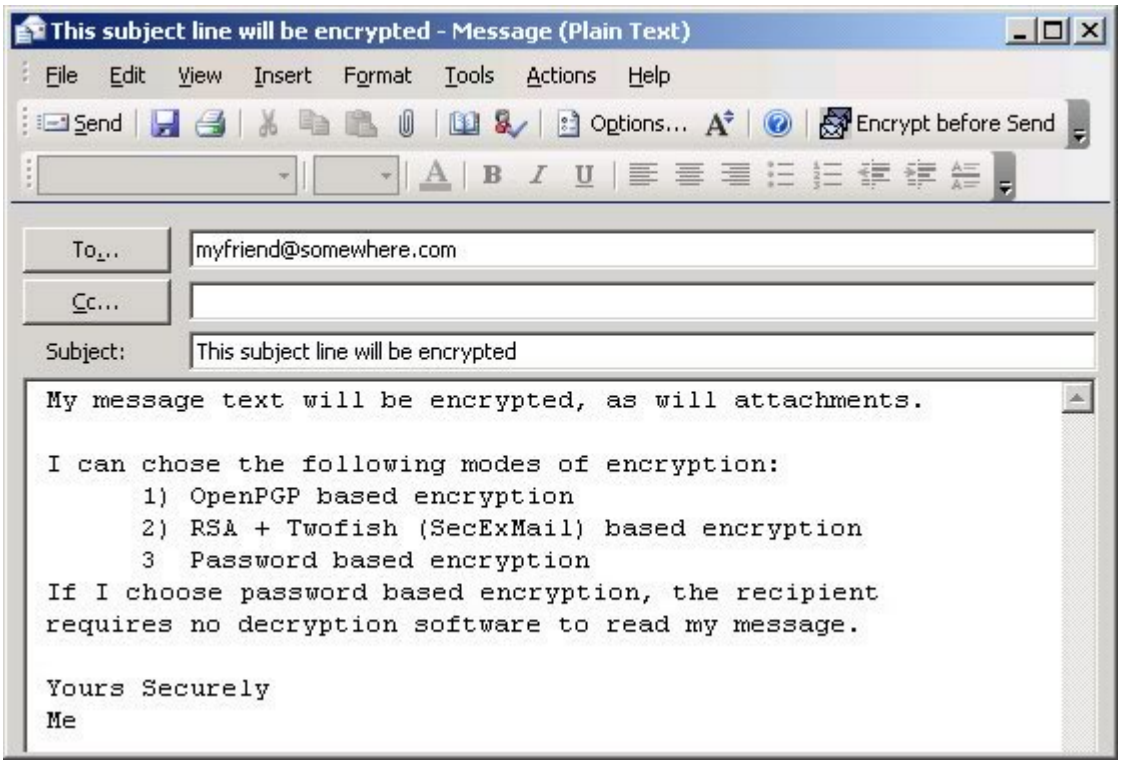
## 2.11 Microsoft Outlook Office Plug-In

Crypto Anywhere integrates with Microsoft Outlook Office ™ to produce seamless encryption and decryption from within popular email software: You can easily send OpenPGP, SecExMail, as well as password protected messages directly from within your favorite email client. Crypto Anywhere support for Outlook Office ™ is available for the following versions of Outlook:

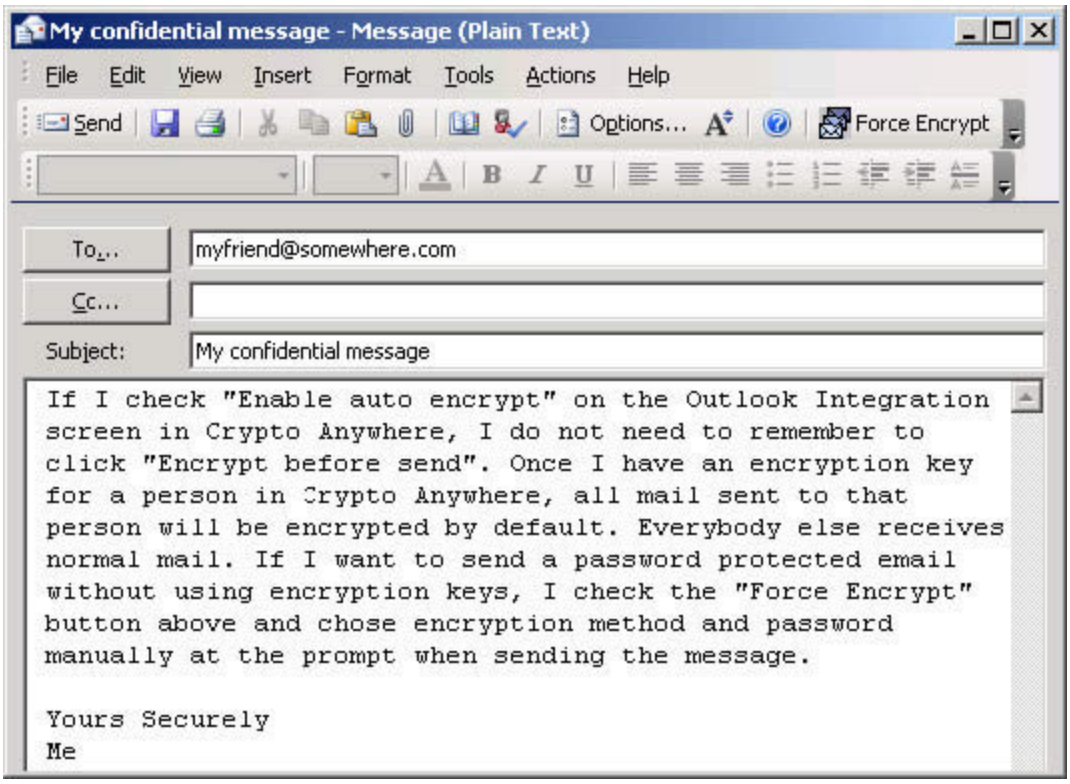
1. Microsoft Outlook Office 2000 ™
2. Microsoft Outlook Office 2002 ™
3. Microsoft Outlook Office 2003 ™

The Crypto Anywhere plug-in for Microsoft Outlook Office ™ is also compatible with Microsoft Exchange ™.

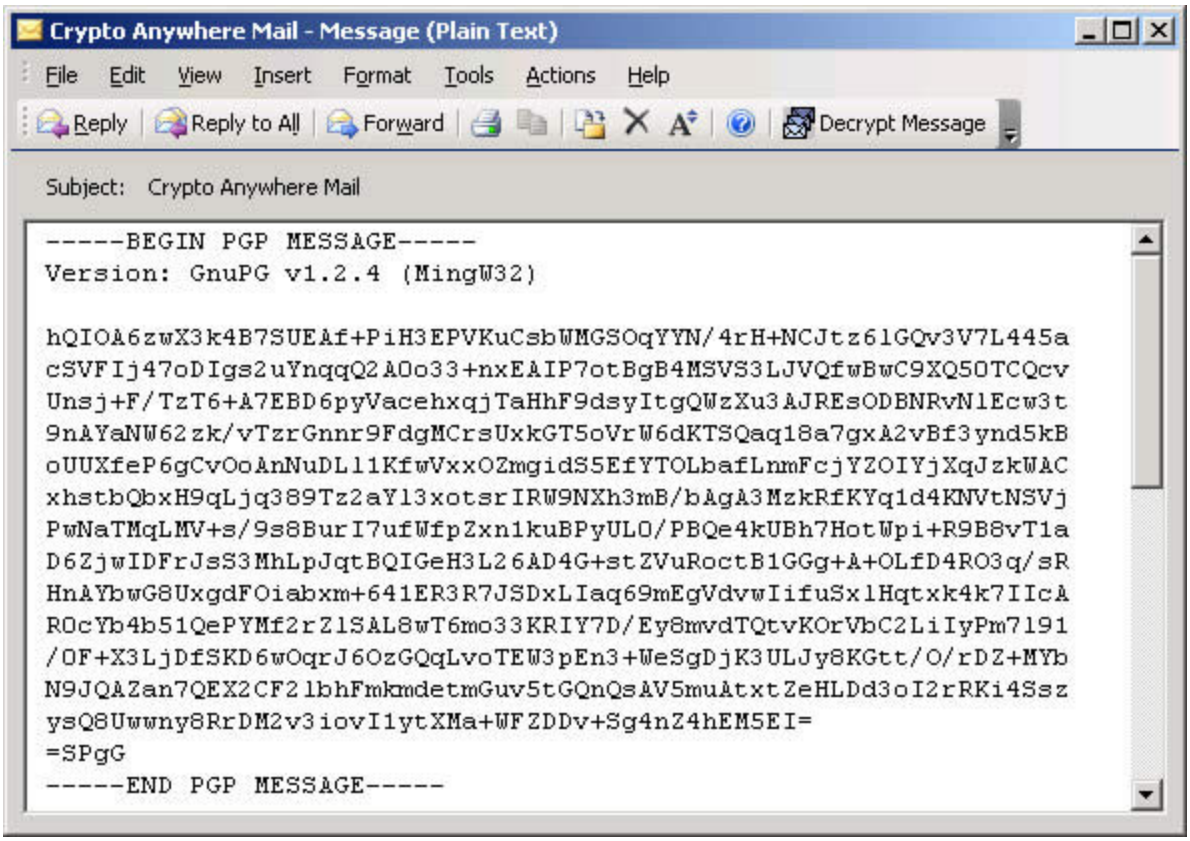
When the Outlook Office plug-in is loaded, you will see a new toggle button "***Encrypt before Send***" on the toolbar when composing a new message. Clicking the "***Encrypt before Send***" button, prompts Crypto Anywhere to be invoked when sending the message. At that time, you will be able to chose the encryption method as well as encryption keys and or password for your message.




The Crypto Anywhere plug-in for Microsoft Outlook Office ™ can automatically select plain text or encryption mode email based on the availability of encryption keys. To enable this feature, click "***Enable auto encrypt***" on the Outlook Integration screen in Crypto Anywhere.

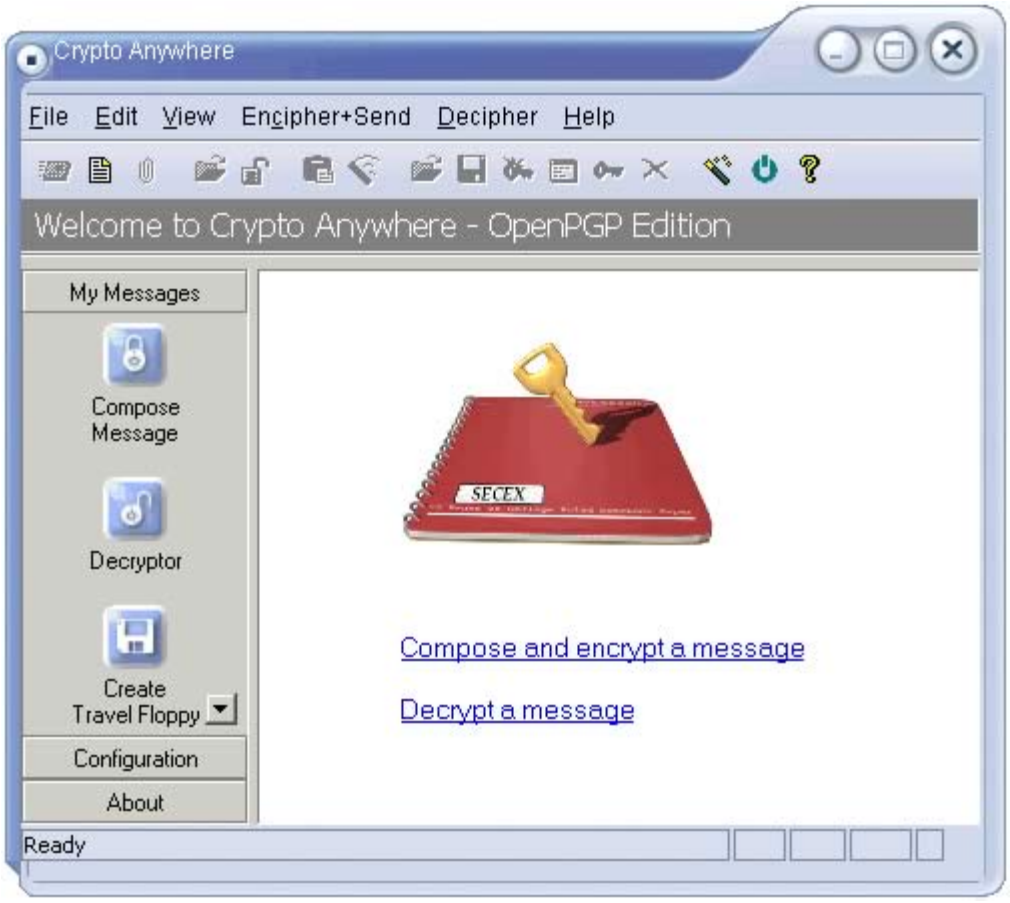


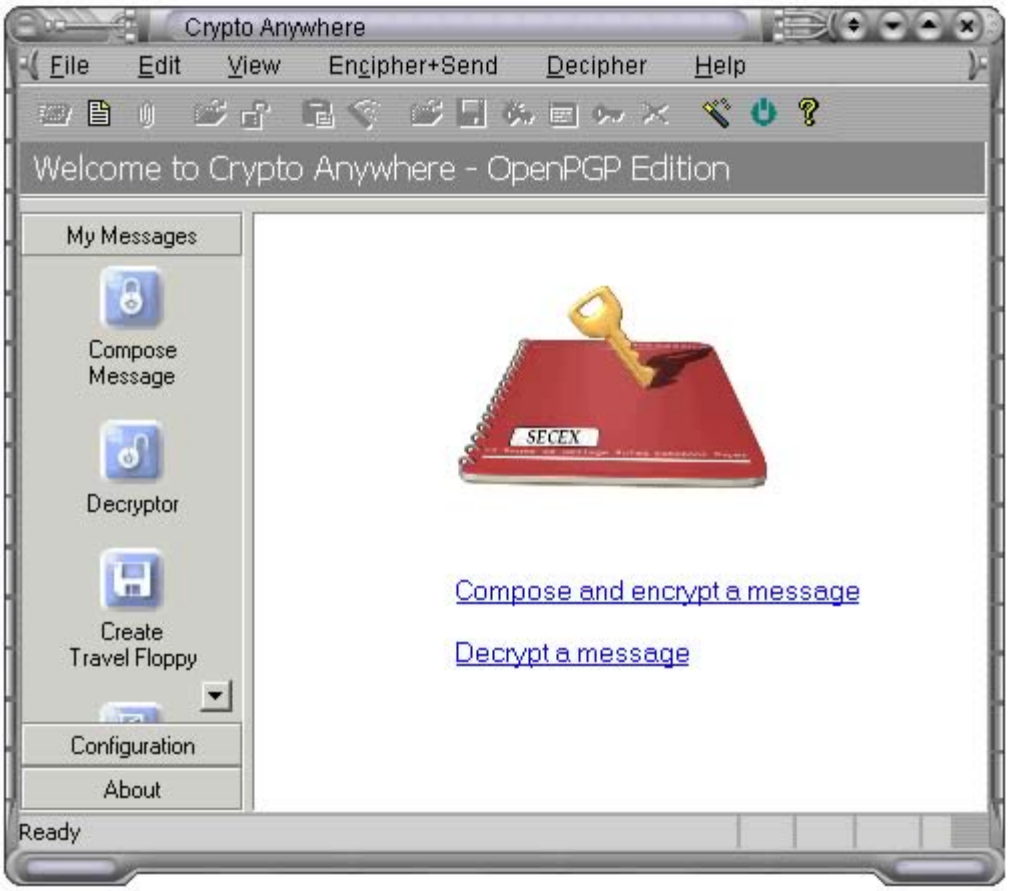

When opening an encrypted message, you will see a new button "***Decrypt Message***". Click this button to decrypt the message text and any attachments.

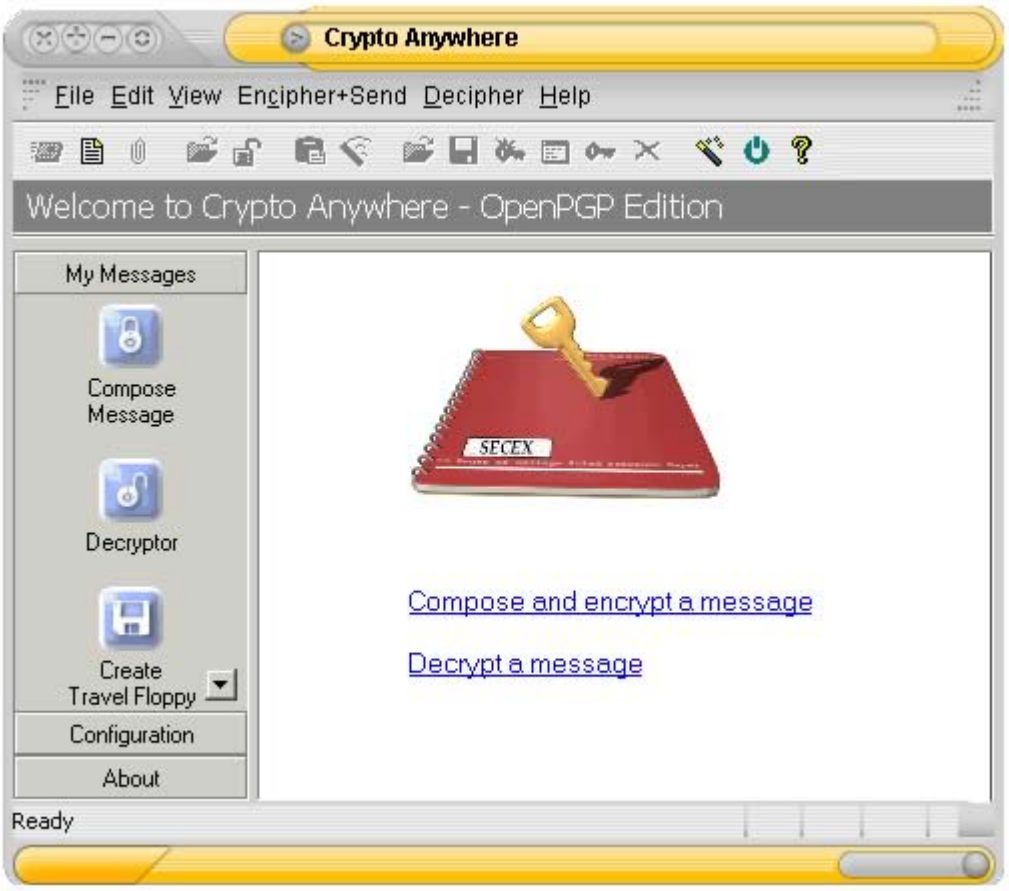



## 2.12 Application Themes

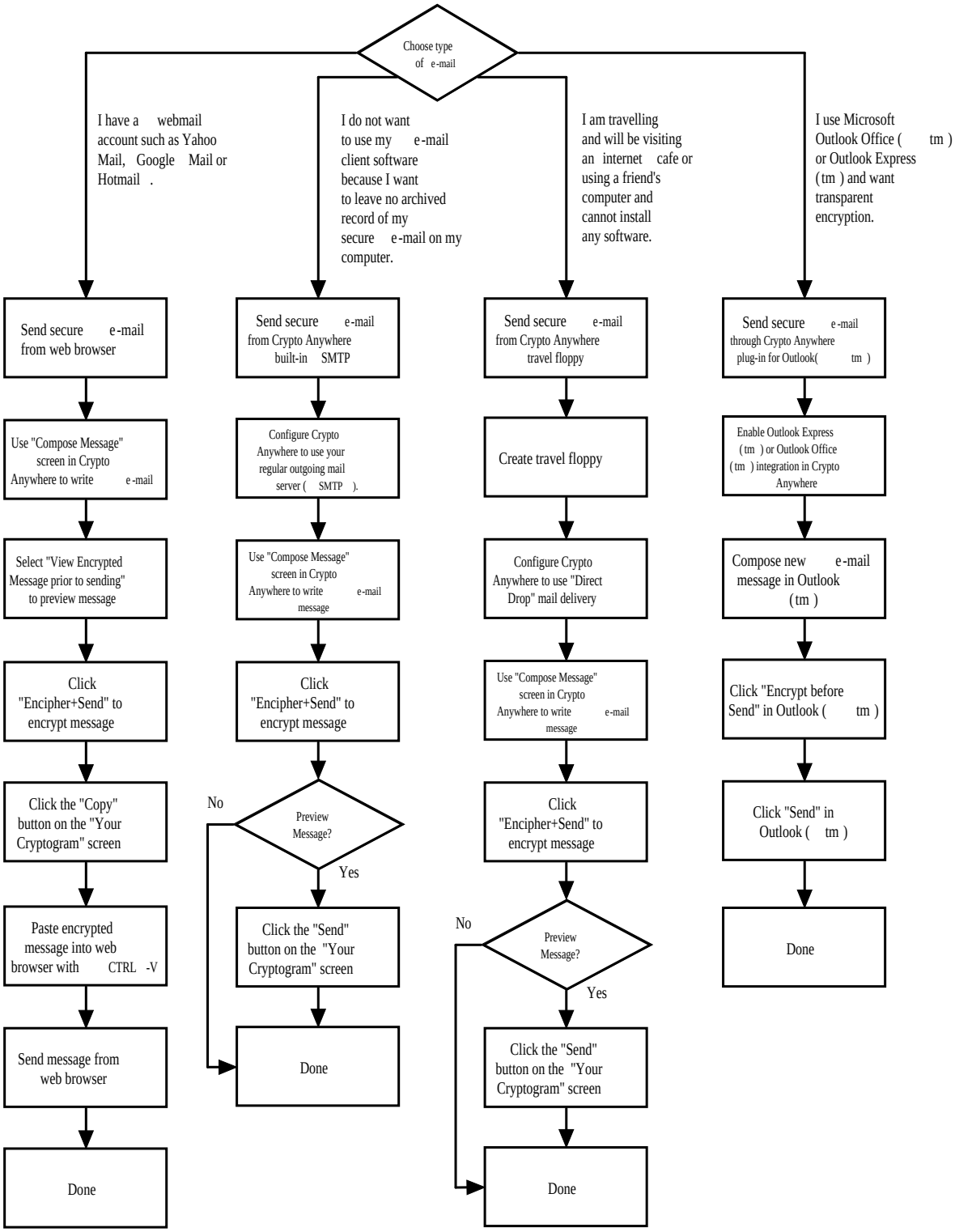
Security need not look conservative. Version 2.0 and later of Crypto Anywhere support user definable application skins. Check www.bytefusion.com for availability of Crypto Anywhere themes. Application skins require Windows NT / 2000 / XP / 2003 (TM) and are not available on Windows 95 (TM) and Windows 98 (TM).



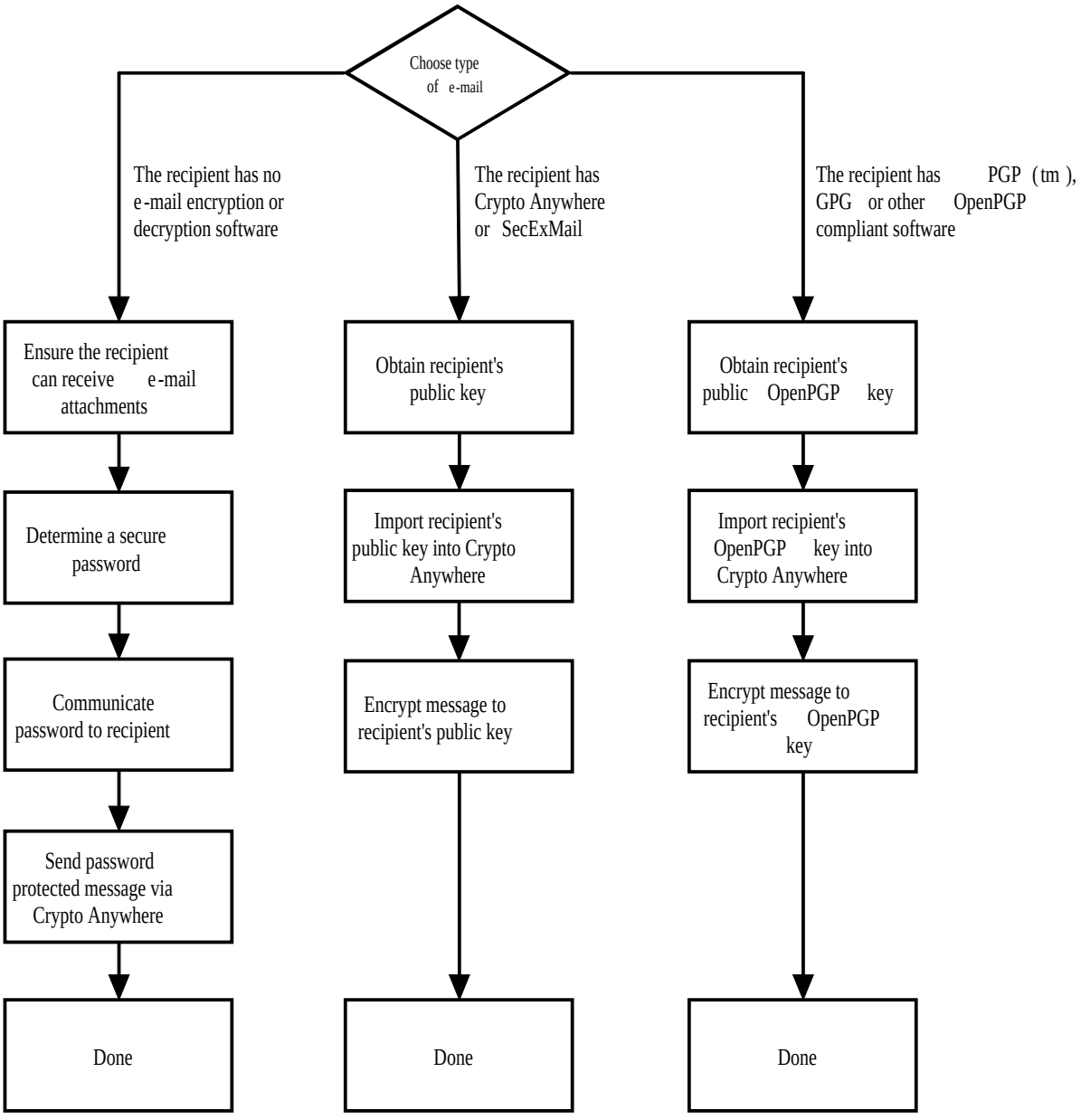




## 2.13 Mail Delivery Modes



## 2.14 Modes of Encryption




# 3 Technical

## 3.1 RSA Public Key Encryption

**"c = me mod n"** is the algorithm that turns the world of e-commerce. Introduced in 1978 by Rivest, Shamir and Adleman after whom the cipher is named, RSA is the worlds foremost public key encryption system. Contrary to the design of classic encryption algorithms where the same key is used to lock and

## 3.2 ISAAC Random Number Generator

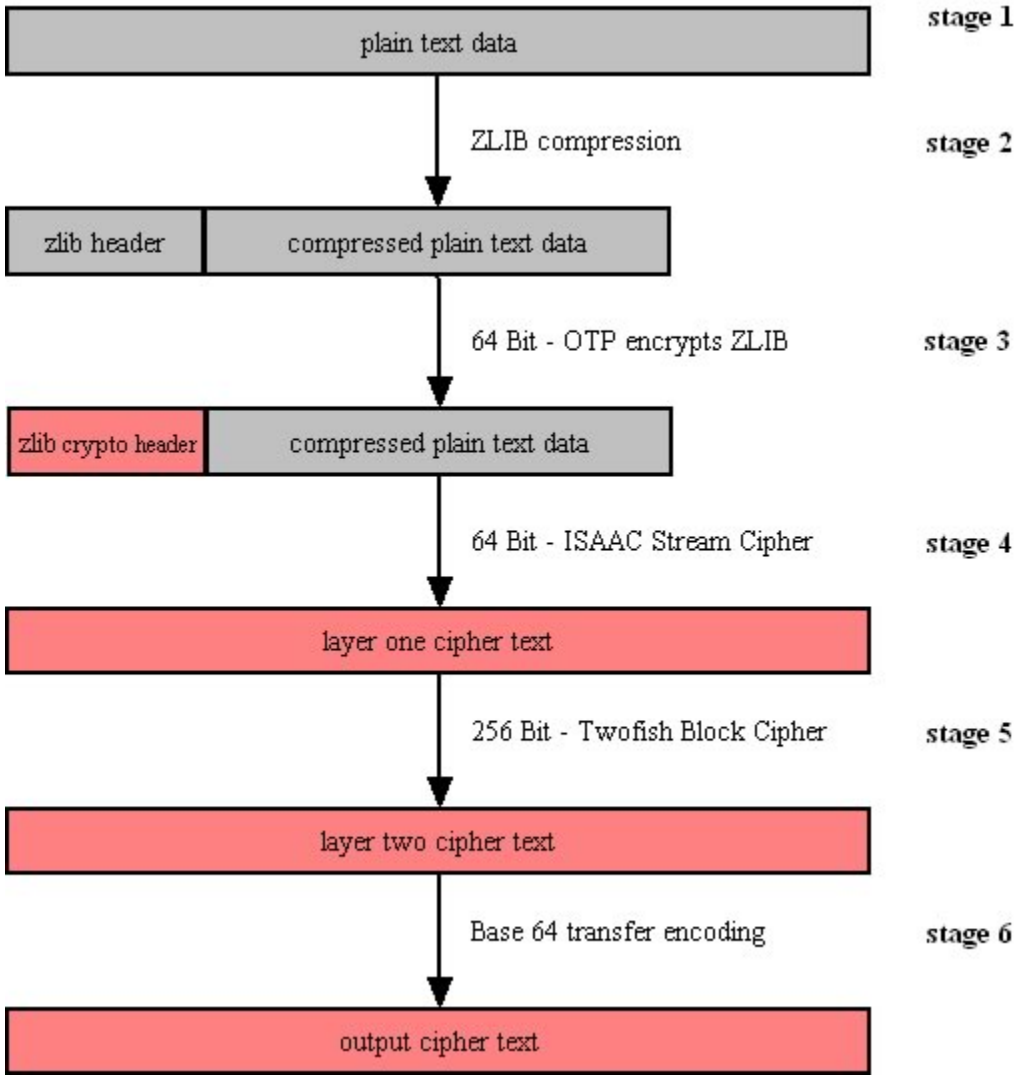
ISAAC (Indirection, Shift, Accumulate, Add, and Count) is a cryptographically secure pseudo random number generator. With an average cycle length of 2 to the 8295th power its output is uniformly distributed and unpredictable. ISAAC has been developed by Bob Jenkins and placed into the public domain in 1996. See Acknowledgements for legal information on ISAAC.

ISAAC is at the heart of SecExMail's entropy collection system and comprises the stream cipher subsystem of the SecExMail cipher.

## 3.3 The SecExMail / Crypto Anywhere Cipher

The SecExMail cipher is a composite cipher specifically designed to operate on real-time email streams. It uses cryptographic primitives which are available to the general public and have been subject to extensive peer review. The SecExMail cipher incorporates RSA public key encryption. Message encryption is performed via the Twofish block cipher and the ISAAC stream cipher. The SecExMail cipher is warranted to be free from spy-ware, key escrow or key recovery features of any kind. The email encryption process is described in detail below. See diagram.

**SecExMail Composite Cipher**




- **Stage 1**

  Email data is received in variable length data blocks. SecExMail parses SMTP header info, mail and data bodies.

- **Stage 2**

  Because email messages frequently contain known plain text, such as salutation and or tag lines, which gives rise to known plain text attacks on the encrypted message and in order to minimize overall message expansion, the plain text is first compressed using the ZLIB compression algorithm. The net effect of deflating large amounts of data, containing both tidbits of known plain text such as greeting or tag lines as well as unknown message text into a compressed data stream is that any known plain text is effectively obscured.

- **Stage 3**

  The ZLIB stream has a fixed header format which in itself might be exploited as known plain text by a savvy cryptanalyst. For this reason, the first 64 bits of the steam are enciphered by way of a

One Time Pad, using standard XOR masking. This approach acknowledges that email messages will contain portions of known plain text and proactively manages this problem.

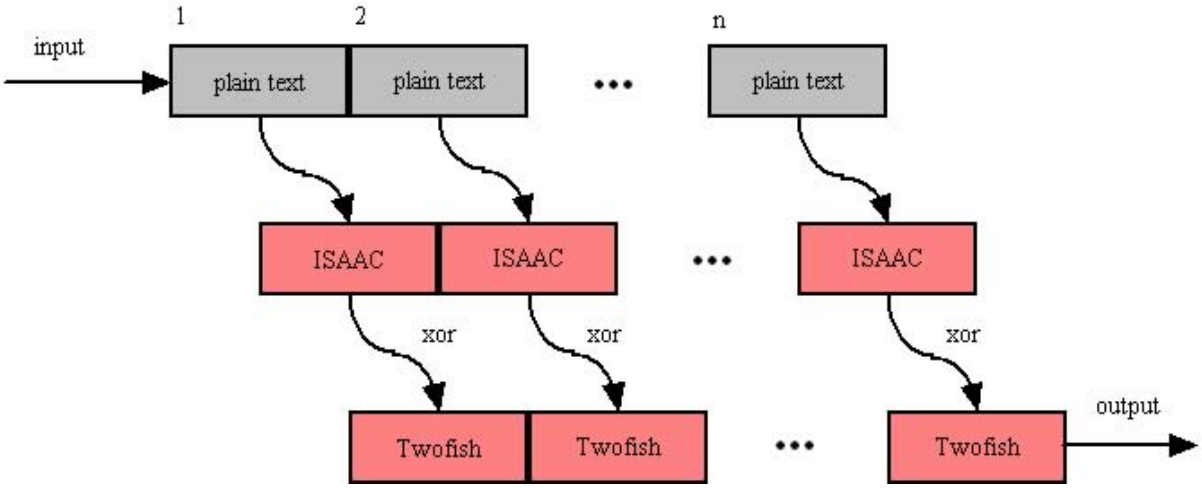
- **Stage 4**

  At this point the compressed data is encoded using the 64 bit ISAAC stream cipher creating the layer one cipher text.

- **Stage 5**

  The next step in the encryption process is to encrypt the layer one cipher text using the 256 bit Twofish block cipher. Twofish is used in chained block mode, but instead of XOR'ing the previous block's cipher text into the plain text of the current block, the output from the ISAAC layer is "chained in". This chaining process is illustrated below.

**ISAAC Twofish Block Chaining**



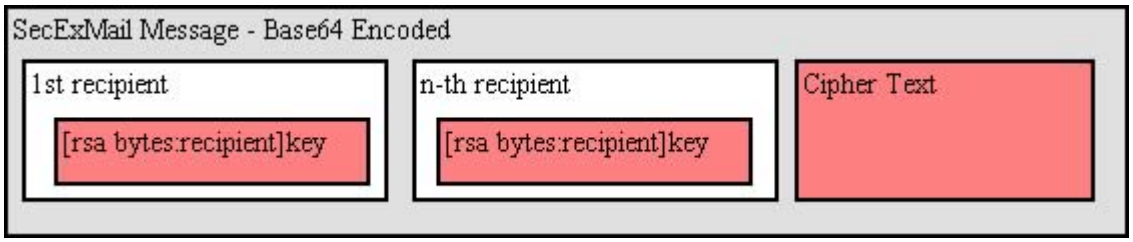

- **Stage 6**

The final step is to assemble the output in base64 transfer encoded format for transmission via mail transfer agents (MTA).

## 3.4 SecExMail / Crypto Anywhere Message Format

SecExMail messages are transferred in base64 encoded format. Messages may be encrypted to multiple recipients. The internal message layout is defined as follows :

**[<rsa bytes>:<recipient>]key[<rsa bytes>:<recipient>]key...cipher text**




- **RSA Bytes**

This is the size of the recipient's RSA key in bytes. Therefore a 2048 bit RSA key would be listed as having a size of 256 bytes. RSA This parameter is defined for RSA key sizes of 2048, 4096, and 8192 bits.

- **Recipient**

This is the email address of the recipient to whom the message is encoded.

- **Key**

This is the SecExMail session key material, encrypted with the RSA public key of the recipient. The SecExMail session key is used to encrypt the message body of the email message and is comprised
of a 64 bit One Time Pad key, a 64 bit ISAAC stream cipher key, and a 256 bit Twofish key.

- **Cipher Text**

This is the message body encrypted with the SecExMail Cipher.

A typical SecExMail enciphered message is depicted below :

```
--Begin SecEx 1.1--
WzI1NjpjaHJpc0BvZmZzaG9yZW1haWxyb29tLmNvbV0dJyyJnwwCm0LI0659zpBY/asERA3FRG9
9
OYRhm5f+rwohYORt8Wp3rmwI2Nguhk38KvH5pg8ZRTXXWiEHYMakQPPXpbnaJepJFZeXTcNMTi/
d
p0Rc5HCTui5okW/00Gv8Sp328Ldh3DlgQcGW7oYt9qxG/cJ/PaVxxxEfDM3I4cnsCyLjfX+I0JY
6
h+emWt4U/N6u+K0tPL4ua2OfGhGoBXo+6KK042bXGpk/Pj6WEOQMcKyR+VrsOx6ZcTgpqS3WCcU
c
2/JDy9zHqlkPLohXcT4G2Hiwp/1JhviaQtoKA2NYYimuY5ZjNUGPMsIaN0h6AKS3/qZsHhK1Ltc
A
WpLnuoFbQleekuJngBCC1RIlIlI4lfFgMkxoUkZrtXg6E217Q6GMMhHMANJ4EU3D2c1BgauDYAQ
G
Rpz0p8efm/WAZoXai6KVElMEiK7tv98s8wu9LpUxN44QYj2eNRVI+72lGPfkBoKvr6eK5/TU4cH
N
Dg9VxCGj4n8KDvfYsPRpBSNzLL+Ta4iz7toQ/MGdPCQa
--End SecEx Mail--
```

## 3.5 SecExMail / Crypto Anywhere Keys

SecExMail employs public key encryption. Messages are encrypted to one or more recipients using their **public keys**. Only the intended recipient can, upon receipt of the message, recover the plain text using his/her **private key**. Public key encryption differs from classical encryption because the recipient of a message does not use the same key for decryption as the sender used for encryption.

In cryptography the fictional characters "Alice" and "Bob" are often used for illustration purposes. Consider the following scenario : Alice lives in New York and Bob lives in Los Angeles. Alice wants Bob to be able to send her confidential mail. She goes to her local hardware store and purchases a dozen or so combination padlocks, sets the unlocking code on each padlock, confuses the dials again, and sends the open padlocks to Bob in Los Angeles.

Bob is now in possession of Alice's padlocks, but not the unlocking codes. When Bob wants to send Alice a confidential letter, he places the letter inside a steel box and locks it with one of Alice's padlocks. Once the padlock is snapped shut, even he himself cannot re-open the box since he is not in possession of the combination which will release the lock. Only Alice will be able to open the box and therefore read the letter once she has received Bob's parcel in the mail.

Public key encryption works much in the same manner. The **public key** may be thought of as an open, electronic padlock. You can send this electronic padlock to all your friends. Your friends may then use that padlock to secure their emails to you in an electronic box. This electronic box is the encrypted email. Upon receipt of the encrypted email, you dial the secret combination which is your **private key** and retrieve the original message.

SecExMail does all this for you.

## 3.6 SecExMail / Crypto Anywhere Key File Format

The SecExMail keys are stored in conventional text files ending in "#.pubrsa" and "#.privrsa" for public keys and private keys respectively. Files are divided into an administrative segment and a data segment. The administrative segment contains information required by SecExMail for key management.

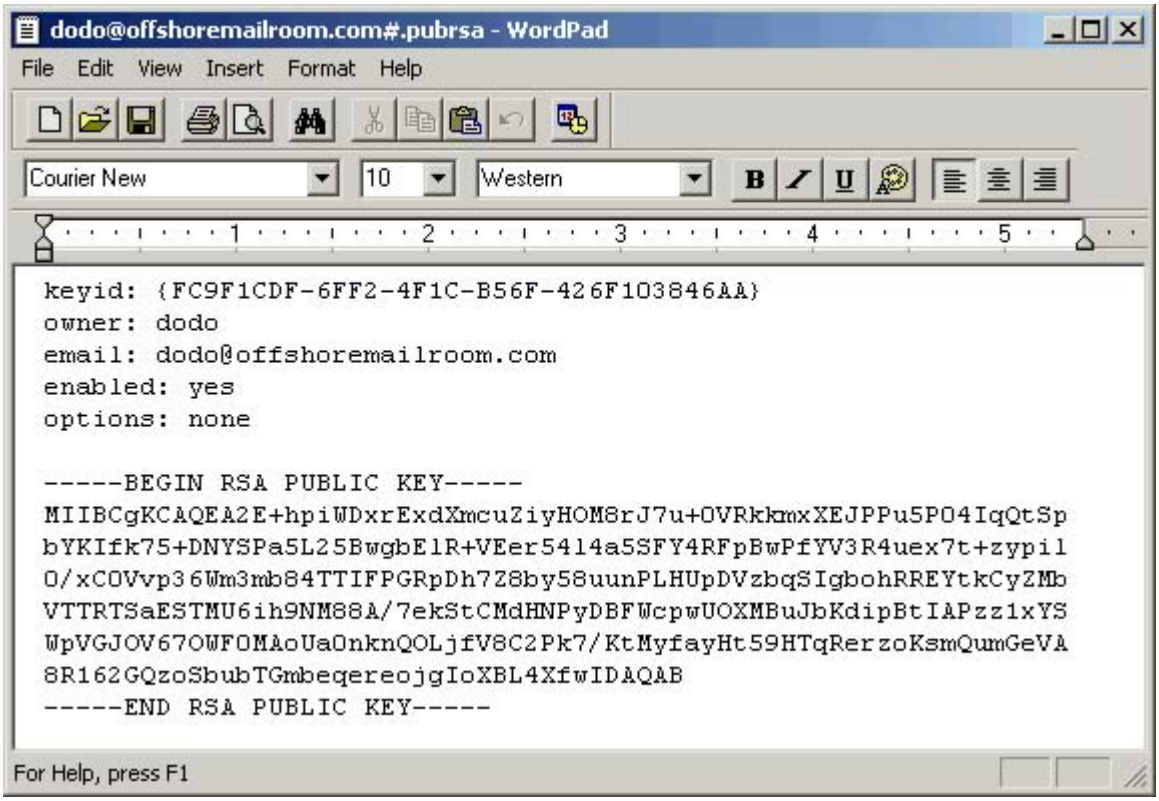
Administrative Segment

| | |
|---|---|
| keyid | Globally unique key identifier; used by SecExMail to associate private and public key components. |
| owner | owner of the SecExMail key |
| email | Email address of key owner |
| enabled | reserved for future use |
| options | vendor options field - reserved for future use |

New lines in the administrative section are denoted by carriage return line feed pairs (ASCII characters 13 + 10).

Data Segment

The data section is comprised of a single RSA key in base 64 encoded format. New lines in the data section are denoted by a single linefeed ( ASCII character 10 ). Private RSA keys are stored in 3DES encoded, chained block cipher format and protected with a passphrase.




## 3.7 One-Time Pads

A one-time pad is a block of random data used to encrypt a block of equal length plain text data. Encryption is usually by way of XOR'ing the one-time pad with the message text. This process may be thought of as a 100% noise source used to mask the message. The one-time pad is secure if it is comprised of random data and is never reused. Because of this, one-time pads have limited application in modern ciphers, but are commonly acknowledged as the holy grail of cryptography.

SecExMail uses one-time pads to encrypt the ZLIB compression header in SecExMail messages.

## 3.8 Requirements

- Windows 95 / 98 / ME / NT / 2000 / XP / 2003
- Access to internet mail server ( SMTP & POP3 )
- Pentium class IBM compatible computer
- Application skins require Windows NT / 2000 / XP / 2003


## 3.9 Known Plain Text Attack

A known plain text attack is the attempt by a cryptanalyst to break a cipher based on knowledge about the plain text of a message prior to its encryption. Simply put, if the cryptanalyst knows the method of encryption, any encryption, part or all of the plain text input to the cipher, and is able to observe the encrypted message text, he / she will likely be able to infer the key used to encrypt the message. This in turn can compromise the security of future messages sent with that key. In greatly simplified terms :

**Plain Text + Key = Cipher Text**
**Cipher Text - Plain Text = Key**

Consider the following scenario : Alice sends Bob an email and attaches her favorite holiday snapshot. The email is encrypted. Assume further that she sends the same holiday snapshot to her mother in plain text. Steve, who wishes to spy on Alice and Bob, was able to intercept her email to Mom and now has a copy of "myholiday.jpg". If the picture consisted of 200 Kilobytes of data (about 200,000 letters) and Alice included only a short personal message to Bob with the picture ( say 50 letters ), then Steve already knows 99% of the message contents prior to encryption and now has greatly improved chances of breaking Alice's key if he comes into possession of the corresponding cipher text.

Crypto Anywhere includes comprehensive protection against known plain text attacks. See SecExMail Cipher for more information.

## 3.10 Registration Advantages

Registered users receive the following benefits :

- Commercial use license
- Product support
- Multiple identities - private keys

- Unlimited secure friends - public keys
- Encrypt attachments
- Themes / application skins
- Create travel floppies
- Variable passphrase length on self decrypting e-mails

Most registered user benefits, with the exception of commercial use, are available during the first 30 days of operation.

# 4 About

## 4.1 About Crypto Anywhere


**Crypto Anywhere - OpenPGP Edition**
**Version 3.0**


## 4.2 About Bytefusion Ltd.


**Bytefusion Ltd.**
**22 Duke Street**
**Douglas, IOM**
**IM1 2AY**
**British Isles**

**Inquiries: sales@bytefusion.com**

## 4.3 Acknowledgements

- **ISAAC Random Number Generator**

  At the time of writing, the ISAAC home page can be found at http://burtleburtle.net/bob/rand/isaacafa.html.
  ISAAC has been placed into the public domain by its author, Bob Jenkins in 1996.

  ---
  My random number generator, ISAAC.
  (c) Bob Jenkins, March 1996, Public Domain
  You may use this code in any way you wish, and it is free. No warrantee.
  ---

- **RSA Public Key Encryption**

  The RSA algorithm was patented until September 2000 when RSA® Security Inc. released the algorithm into the public domain. *"BEDFORD, Mass., September 6, 2000 -- RSA® Security Inc. (NASDAQ: RSAS) today announced it has released the RSA public key encryption algorithm into the public domain, allowing anyone to create products that incorporate their own implementation of the algorithm."* At the time of writing a copy of this statement can be found at http://www.rsasecurity.com/news/pr/000906-1.html

- **Twofish Block Cipher**

  The Twofish block cipher by Counterpane Labs was developed and analyzed by Bruce Schneier, John Kelsey, Doug Whiting, David Wagner, Chris Hall and Niels Ferguson. Twofish was one of the five Advanced Encryption Standard finalists. At the time of writing the Twofish homepage can be found at http://www.counterpane.com/twofish.html. The cipher has been made available to the general public by the following statement on http://www.counterpane.com/about-twofish.html :

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- **ZLIB Compression Library**

  ZLIB is a lossless data-compression library written by Jean-loup Gailly and Mark Adler. ZLIB is made
  available as free, unpatented software to the general public at http://www.gzip.org/zlib/. The license conditions are set forth at http://www.gzip.org/zlib/zlib_license.html and reproduced below :

```
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Jean-loup Gailly jloup@gzip.org
Mark Adler madler@alumni.caltech.edu "
```

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  Katja Bengtsson of Brisbane, Australia ( katja@offshoremailroom.com )

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- **SecExMail Encryption**

  Chris Kohlhepp and Mark Robertson, Bytefusion Ltd.

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