

R10Cipher 5

User Guide and Reference



Cross Platform Text and File Encryption / Cipher Tools with Automation



Table of Contents

Registering R10Cipher	3
Introduction	4
Quick Start: Text Encryption	5
Quick Start: Text Decryption	6
Quick Start: File Encryption	7
Quick Start: File Decryption	8
Decrypt a File from Within R10Cipher	8
Double Click a File to Decrypt	8
Quick Start: Sending an Encrypted Email	9
Zero Effort Corporate Licensing	10
Key Management	11
Introduction	11
Recommended Use of Shared Secrets and Passwords	12
Creating the Key Management Database	13
Key Creation and Administration	14
Key Retrieval	11
Scenario 1: Encrypting or Decrypting Text or a File from within R10Cipher	11
Scenario 2: Double Clicking an Encrypted File to Decrypt It	12
Auto Generate Shared Secrets	13
Usage Scenarios and Examples	14
Example 1: One to One Private Communications	14
Example 2: One to Many Private Communications	14
Example 3: One to Many Private Communications over a Public Medium	14
Example 4: The benefits of Cross Platform	14
Example 5: R10Cipher Not Just for Men	14
Trial Version Limitations	15
Using the Trial Version for Decrypt Only	16
Addendum 1: Associating r10Enc on Macintosh OSX	17
Addendum 2: Associating r10Enc on Windows XP	18
Addendum 3: General Guide to Encryption	19
Addendum 4: Blowfish Encryption	20
Addendum 5: Frequently Asked Questions	21
Addendum 6: Credits	22

Registering R10Cipher

After downloading the R10Cipher Trial and deciding that you would like a full working copy, you can purchase this directly at the following web address:

<http://www.artenscience.com/r10cipher/Pages/buy.html>

Once you have done this we are automatically notified of your purchase and a User ID and Serial Number are sent out to you via email. The Serial Number is tied to your ID and the two must be used in conjunction.

Note: R10Cipher 5 needs a different serial number to all previous versions. Existing users can upgrade at reduced cost. Please contact upgrade@artenscience.com for further details.

Follow the instruction in the email with the license key and R10Cipher will be ready to go in seconds.

Our licensing allows one purchase to be installed on two computers that you own, for example your desktop and also your laptop. Please respect our efforts and purchase additional licenses if you need to install on multiple computers. We also offer family licenses, lifetime licenses and site licenses for corporations.

Any problems with registration, please email us at: support@artenscience.com

Introduction

R10Cipher is a simple but extremely powerful Cross Platform Encryption / Decryption tool.

R10Cipher takes text or files and encrypts them using up to 384 bit Blowfish encryption.

These files can be Word files, Excel files, MP3 files - almost any kind of file.

These encrypted files can be copied elsewhere, even to a different operating system and unencrypted by anyone in possession of the Shared Secret that was used for the encryption.

If encrypting text, the Cipher Text can then be copied into an email, saved as a file and attached to an email or just copied elsewhere.

The recipient can use R10Cipher to open the file and view the encrypted contents, assuming they are in possession of the Shared Secret that was used to encrypt the document in the first place.

If encrypting a file the encrypted file can be stored or sent in the full knowledge that it's contents are not visible to anyone without access to R10Cipher and the Shared Secret.

Decryption can be carried out just by double clicking the encrypted file and entering the Shared Secret.

R10Cipher supports batch encryption by 'drag and drop' to make encryption fast and painless, even when dealing with dozens of files.

As R10Cipher does not require installation you can for example copy the Mac, Windows and Linux versions of R10Cipher to a USB drive along with your encrypted documents and files. Your documents and files are secure ,but available whenever and wherever you require them.

R10Cipher does not make any alterations to your computer and stores it's configuration files within it's own folder.

Many people do not realise that sending an email is the equivalent of sending a postcard, it's contents are easily visible. For many companies, individuals and markets this is totally unacceptable and with the potential complexity and setup issues with the Public Key Encryption systems it makes sense to encrypt using R10Cipher.



R10Cipher, like all software, is a work in progress. We need your feedback to keep R10Cipher as the best Cross Platform Encryption Tool available. Contact us with your suggestions and comments.

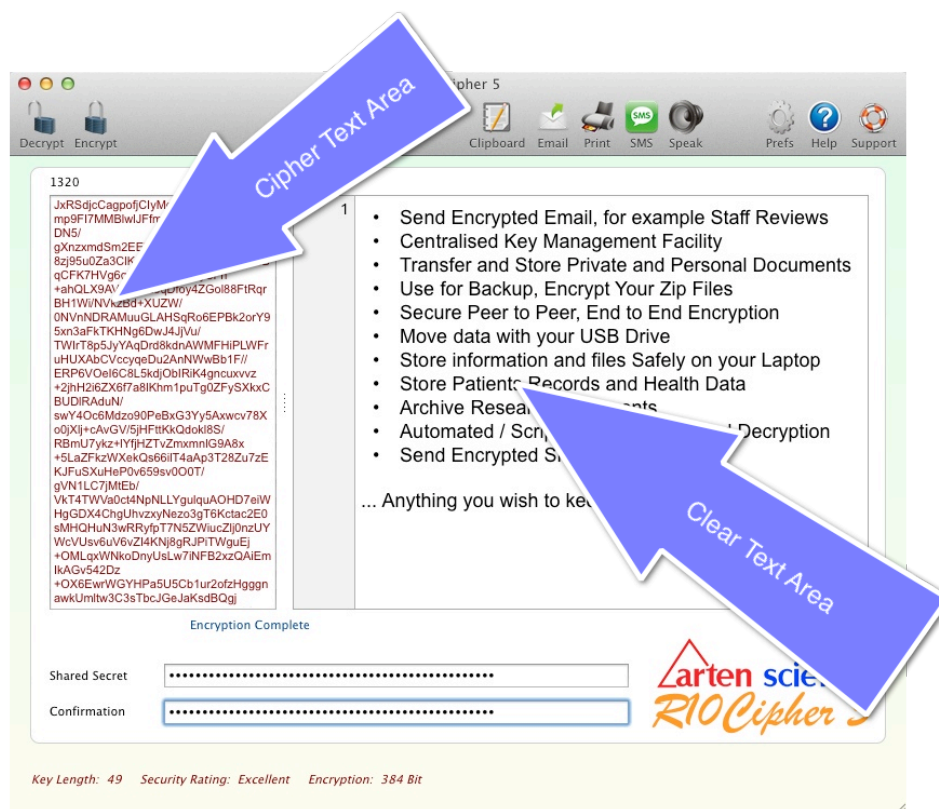


Quick Start: Text Encryption

After downloading, unzip the file. Depending on your browser settings your operating system may do this automatically for you. Drag the folder to a convenient location on your hard disk. Double click the R10Cipher file to launch the program.

Note: Users of Linux may have to view the file permissions and set the 'execute' flag.

You will see the R10Cipher main screen. The OSX version is shown below:



Enter your Shared Secret (this is your encryption key) into the area at the bottom left of the screen. This can be between 4 and 56 characters. For example: yuetrtypl*565r0. Enter your Shared Secret again in the area directly below to confirm that you did not make any typing errors.

Note: The strength of the encryption is directly related to the length of your encryption key.

Enter the message or text you wish to encrypt into the Clear Text area. You can right click and Paste the text, or use Drag and Drop if you wish.

Select the Encrypt button. You will see the encrypted text shown in the Cipher Text area of the screen.

You have several options:

Toolbar > Email: Send Encrypted text by Email

Toolbar > Clipboard: Copy the Encrypted text

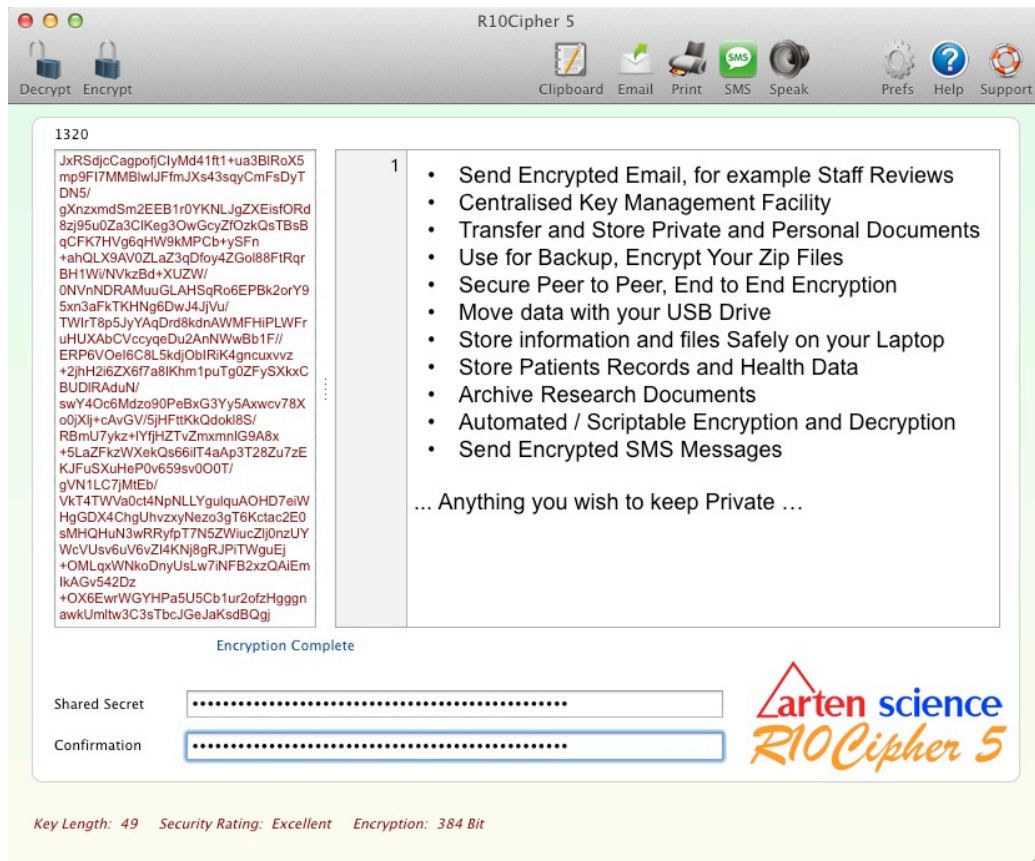
Toolbar > Print: Print the Clear Text

Toolbar > Speak: Speak the Clear Text

Toolbar > SMS: Send Encrypted text by SMS (SMSRelay Required)

Menu > Save: Save the Encrypted text as a document.

Quick Start: Text Decryption

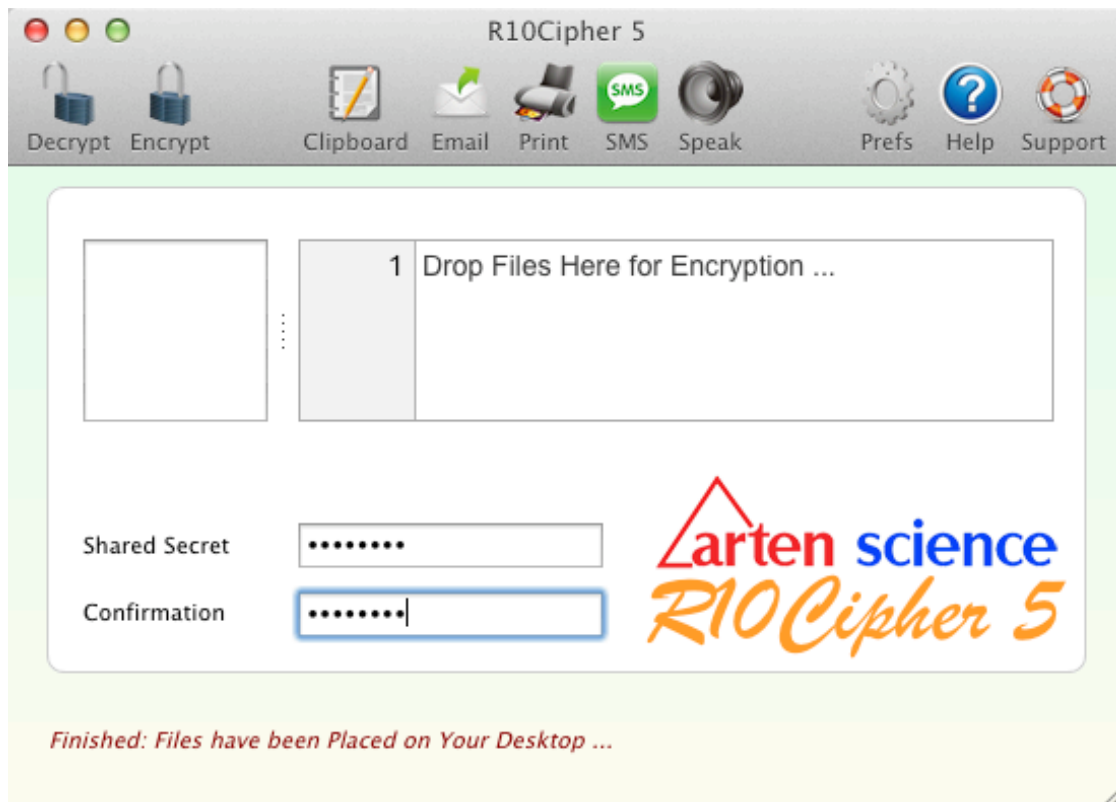


To Decrypt a message or text use any of the following options:

1. Open an Encrypted document using the Open option on the File Menu
2. Paste the Encrypted text into the Cipher Text area.
3. Drag the Encrypted text into the Cipher Text area.

Enter the Shared Secret and Select the Decrypt button to view the Decrypted contents.

Quick Start: File Encryption



Drag and Drop your files over the Clear Text area. They will be encrypted for you.

The filename for the Encrypted files remains the same but the file extension is changed to .r10Enc. (*This can be manually changed should you wish to disguise the nature of the encryption as a further security measure*)

For average size documents and files the encryption will be virtually instantaneous.

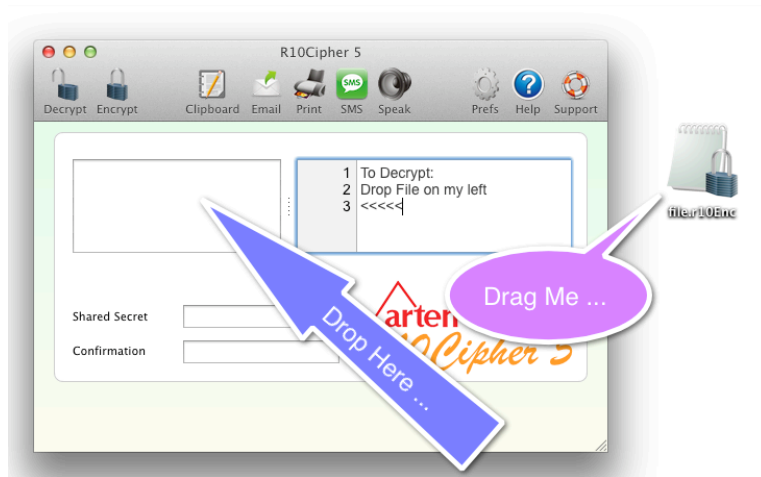


Quick Start: File Decryption

There are two ways to Decrypt files with R10Cipher.

Decrypt a File from Within R10Cipher

The first way is to open R10Cipher, enter the Shared Secret and Drop the Encrypted File onto the Cipher Text Area.



Double Click a File to Decrypt

The second way to Decrypt an R10Cipher encoded file: R10Cipher attempts to make working with encrypted files as simple as possible. Therefore any encrypted file can be decrypted just by double clicking the encrypted file.

Following the double click you see this window:



Enter the Shared Secret that was used to encrypt the file and press the Continue button, alternatively you can select one of your Key Management records and the associated password. R10Cipher will then save the decrypted file with the original file name.

NOTE: Before you use this feature for the first time you may need to associate the R10Enc files with the R10Cipher Software. How you do this depends on your Operating System. We have instructions in the Addendum for Mac OSX and Windows XP.

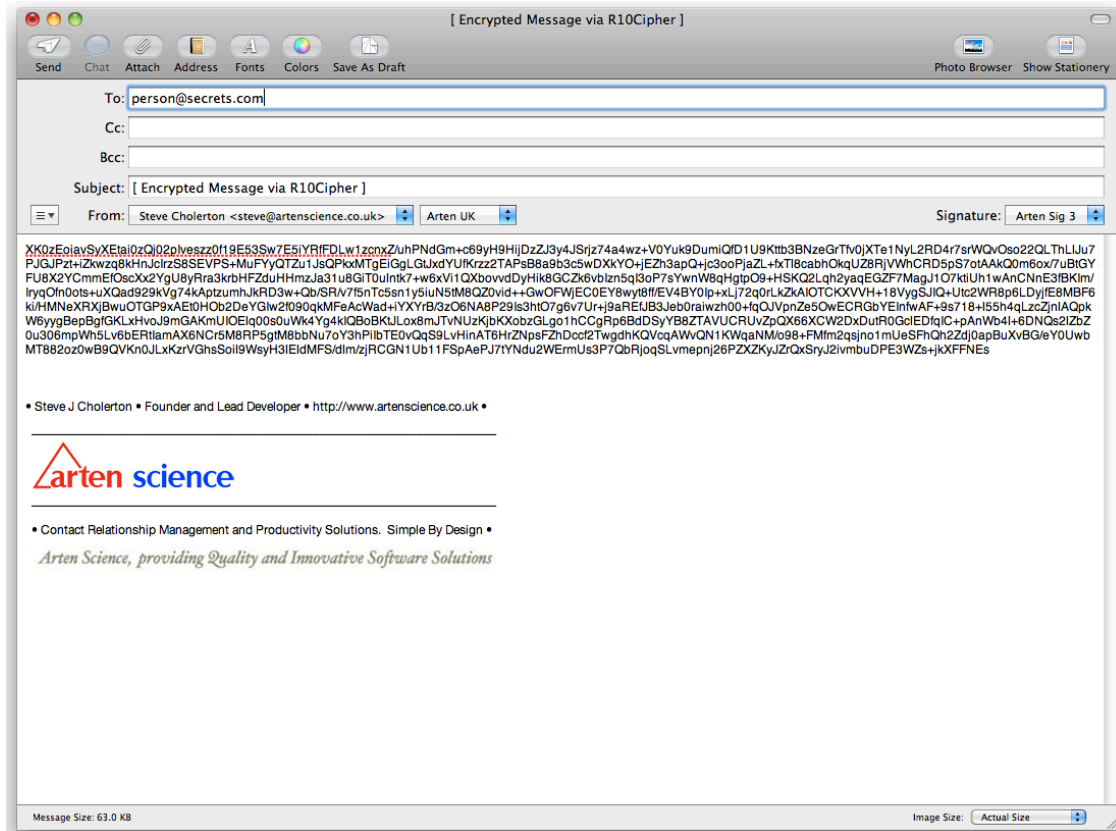
Arten Science, providing Quality and Innovative Software Solutions

Quick Start: Sending an Encrypted Email

Enter the message or text you wish to encrypt into the Clear Text area. You can right click and Paste the text, or use Drag and Drop if you wish.

Select the Encrypt button. You will see the encrypted text shown in the Cipher Text area of the screen.

Click the Email button and an email will be opened for you with the encrypted text as the message. Alter the 'To' and click Send.



Zero Effort Corporate Licensing

R10Cipher features the ability to license the program for the user just by deploying a file to them, maybe via email, which they then drag into their R10Cipher folder. If R10Cipher is currently running as a Trial Version the file will be read next time the program is started and the program automatically licensed.

The file must be named as follows:

R10Cipher_License.ini

and the contents must be in plain text format and read as follows:

<pUserName>Name Goes Here</pUserName>
<pSerial>Serial Number Goes Here</pSerial>

In a multi desktop environment Zero Effort Licensing saves time and effort and provides a painless way to license your Arten Science product.

If purchasing a corporate version of R10Cipher you can request that we send you the license file you need, instead of just the serial number and user name that we usually provide.

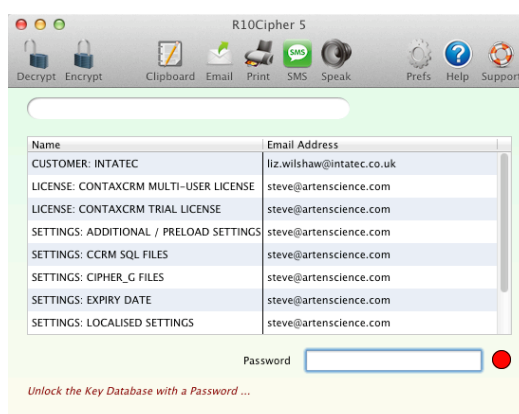
Using Keys



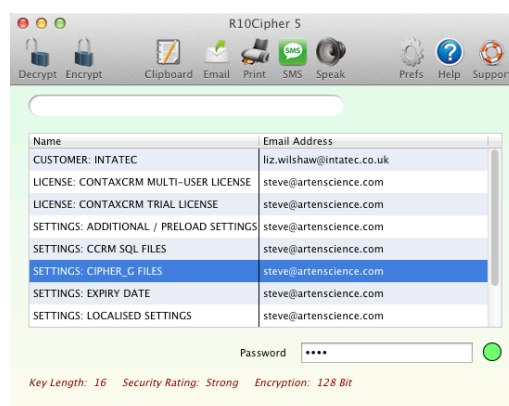
Full information on Key Management is now available in a separate Key Management document which can be downloaded from the R10Cipher website.

Scenario 1: Encrypting or Decrypting Text or a File from within R10Cipher

In these circumstances instead of having to remember and enter the Shared Secret for the contact you can instead go to the **View Menu > Keys** and input the Master or Usage Password for the appropriate contact. Then choose the contact from the list. You can search for the contact and filter the list using the search box on the top right of the screen.



Select the contact in the list. If you have entered the correct Password the indicator will change from red to Green and the Shared Secret fields will be populated.



You can now encrypt text or files without having to enter the Shared Secret.

Another Advantage of retrieving the Shared Secret from the Key Management Database is that if you are sending an encrypted email, R10Cipher will know the email address and fill in the email header appropriately.

So instead of having to remember lots of Shared Secrets and Email Addresses, you only, using the Key Management Database, have to remember a single Password.

Arten Science, providing Quality and Innovative Software Solutions

Scenario 2: Double Clicking an Encrypted File to Decrypt It

When double clicking an encrypted file you now see the following screen:



In these circumstances instead of having to remember and enter the Shared Secret for the contact you can instead input the Master or Usage Password for the appropriate contact.

You can search for the contact and filter the list using the search box on the top right of the screen.

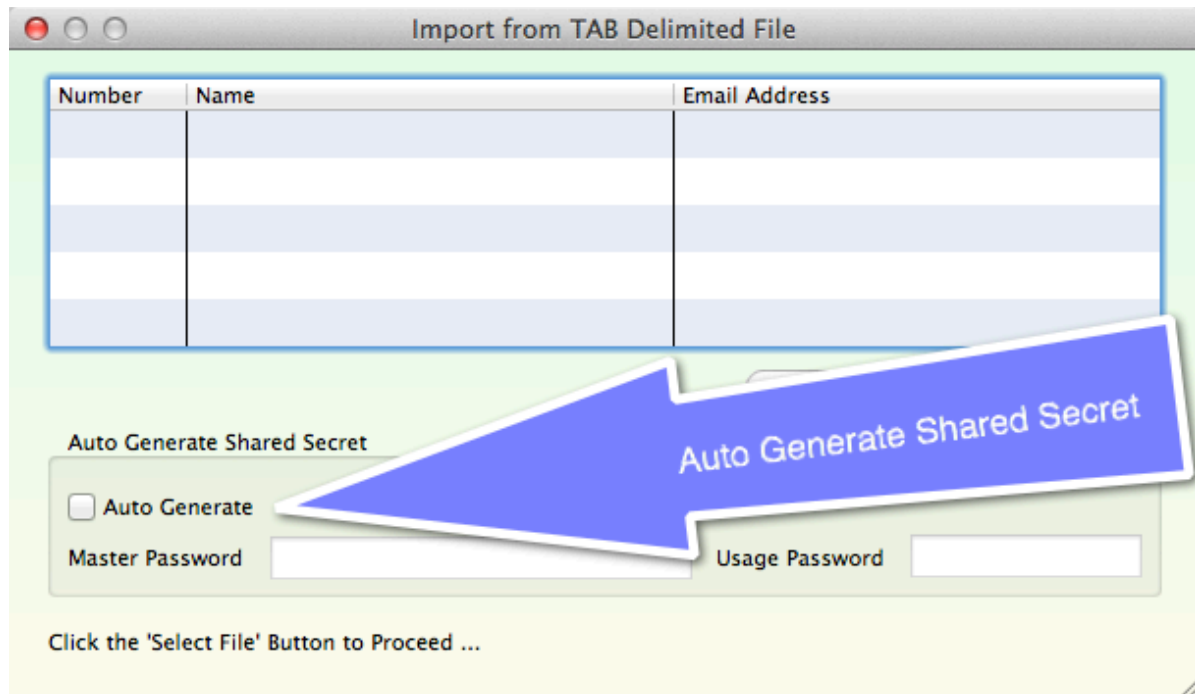
Select the contact in the list. If you have entered the correct Password the indicator will change from red to Green and the Shared Secret fields will be populated.

Click Continue to Decrypt your file.

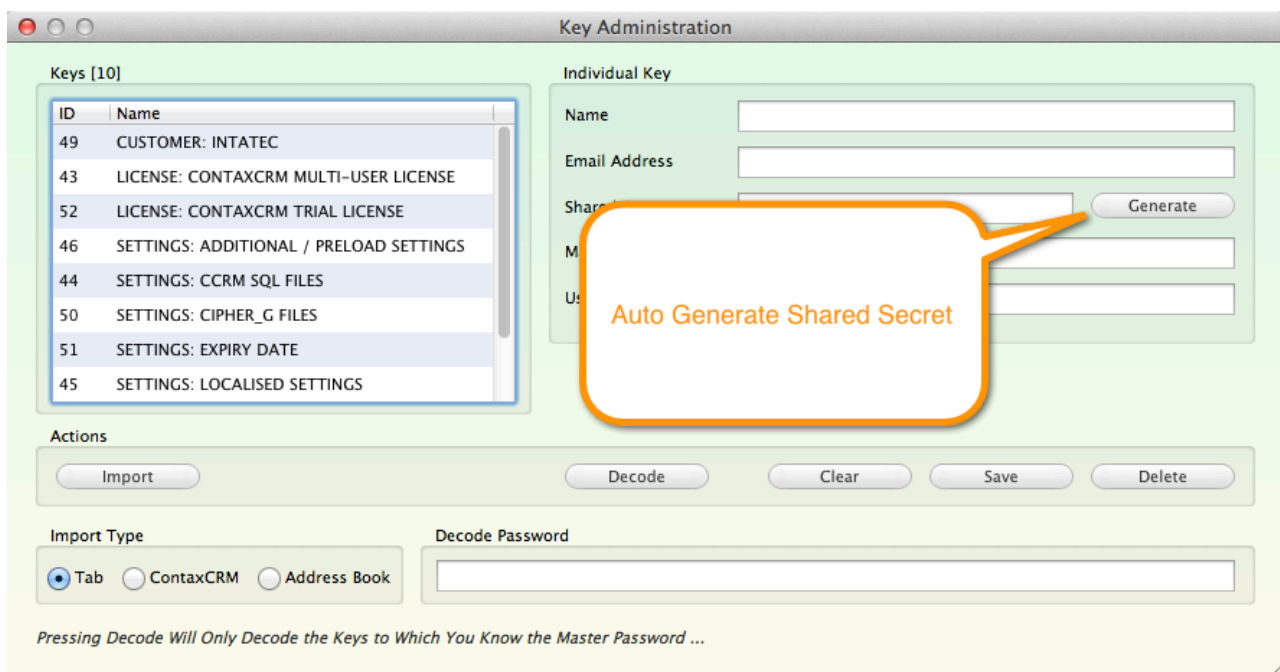
Auto Generate Shared Secrets

R10Cipher from version 3.1.0 will if you require, automatically generate the Shared Secrets. You of course still need to tell R10Cipher the Master and Usage passwords or else you cannot see the automatically generated passwords in order to inform your clients / contacts of them.

Auto generation can happen during import ...



... or can be done on an individual Key by clicking the 'Generate' button.



Usage Scenarios and Examples

Example 1: One to One Private Communications

Bill and Ted want to discuss plans for their next Excellent Adventure. Knowing that their email can be easily read they decide on a Shared Secret 'Bill+Ted=Wyld'. They type their discussions into R10Cipher and save the encrypted text as a file which they attach to their emails. They are now secure in the knowledge that no-one can foil their plans.

Example 2: One to Many Private Communications

Bill and Ted decide they want to involve the Historical Babes in some of their plans, but not all. The four of them agree a Shared Secret and now Bill and Ted can communicate between themselves using their own Shared Secret and if they wish to include the Historical Babes they use the second Shared Secret agreed between the four of them.

Example 3: One to Many Private Communications over a Public Medium

Frodo is setting off on his next adventure and as is the fashion nowadays he wants to update the world with his travels via an online blog. With his new Macbook Air this will work great but there is some information he wishes only to be read by Merry and Pippin who are holding the fort for him back in Hobbiton.

Before he sets off the three of them agree on a Shared Secret and as Frodo updates the world via his blog he uses R10Cipher to append an encrypted entry on the end, knowing that the world can see but not read or understand his instructions, which are only for the eyes of Merry and Pippin.

Example 4: The benefits of Cross Platform

Unfortunately, small and sexy though it is, the Macbook Air is just a little bit too big (and lets face it - expensive - to take across Middle Earth, what with the Orcs and all. At the last minute Frodo switches to a Mini Notebook running Linux which came free with his mobile broadband card. Luckily R10Cipher works as well on Linux as it does on the Mac or Windows, so Frodo has no need to change his plans, or his software.

Example 5: R10Cipher Not Just for Men

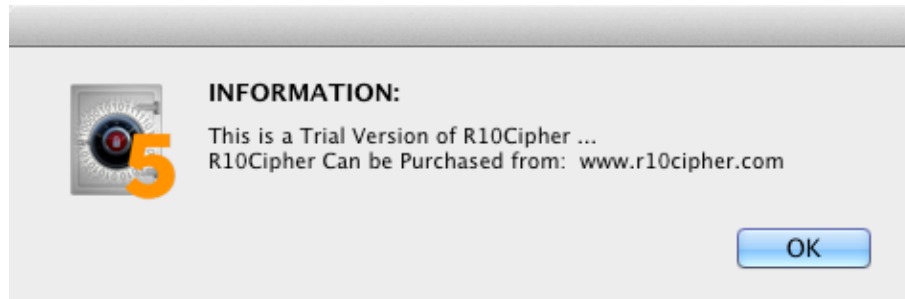
While Frodo is off on his travels his wife, feeling lonely, takes a lover. Knowing that the local Hobbiton ISP takes quite an interest in the emails to and from the villagers, they both use R10Cipher to arrange their rendezvous. Even hobbits need loving, besides it was rather selfish of Frodo to disappear like that for months at a time - and who knows what he got up to with Sam on that first journey ?

Arten Science, providing Quality and Innovative Software Solutions

Trial Version Limitations

R10Cipher can be used for 14 Days prior to purchase, this is to enable you to be sure that R10Cipher is fit for your needs.

During this trial period R10Cipher will show the following message at certain times:



In addition the trial version of R10Cipher will only encrypt text streams smaller than 300 characters.

Purchase of a license removes all limitations and messages.

<http://www.artenscience.com/r10cipher/Pages/buy.html>

Using the Trial Version for Decrypt Only

R10Decrypt is no longer available as a free 'Decrypt Only' tool for R10Cipher. Instead we have the following, easily maintainable solution:

The Trial version of R10Cipher can be used for Decryption Only purposes without the annoying Nag Screen and Screen Overlay / Trial Version Window.

To enable this mode of operation open the Preferences Window and enter the User Name as:

Decrypt Only

Leave the Serial blank.

Alternatively, when you first startup R10Cipher you get the following window:



If you select the 'Decrypt Only' button then the software is licensed for Decrypt Only and the Trial Version and Nag windows will not appear.

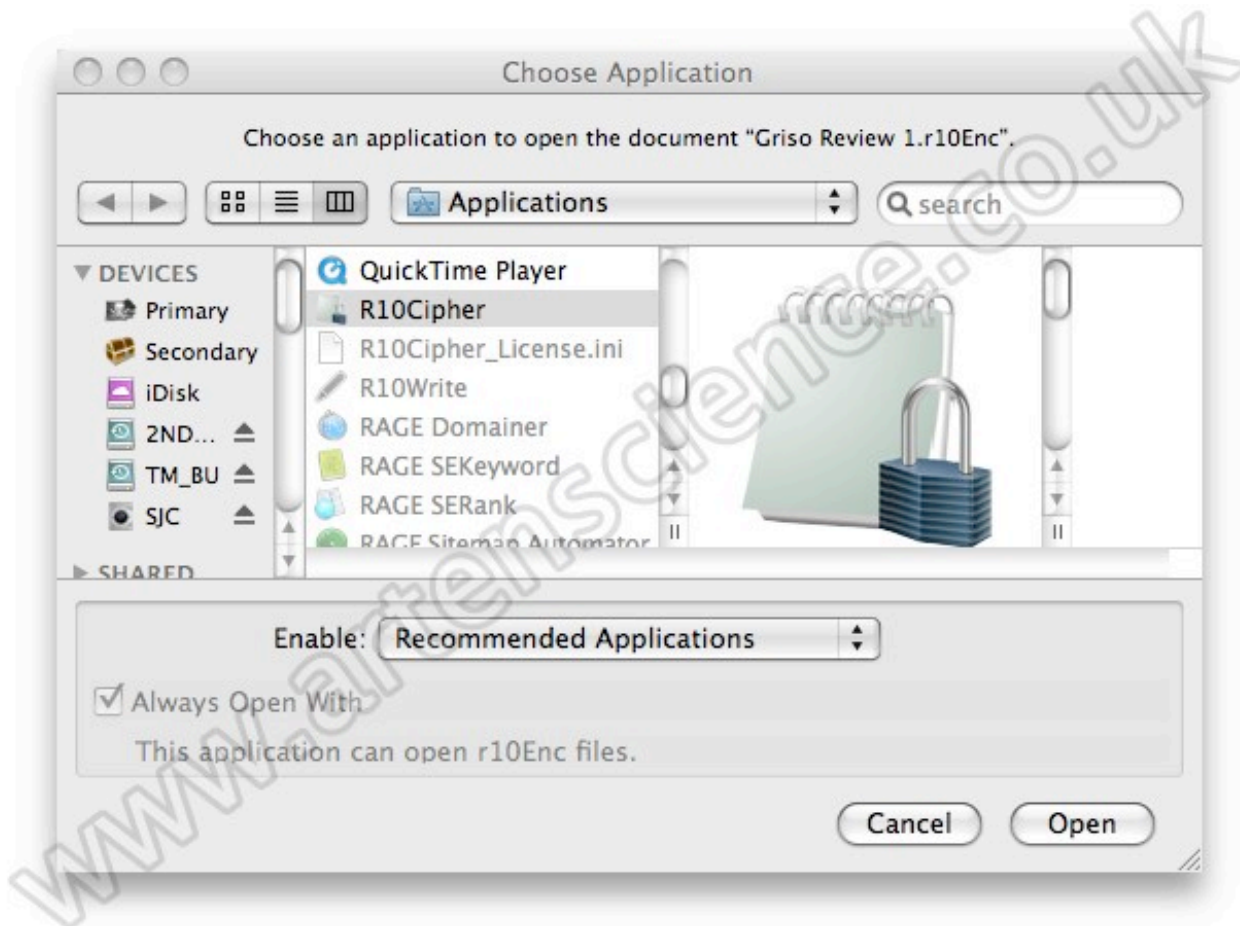
For one way encrypted communications this means that the recipient does not have to purchase a copy of R10Cipher.

Addendum 1: Associating r10Enc on Macintosh OSX

To open a particular program on OSX when a particular file type is clicked it is sometimes necessary to first associate that file with the program you would like to automatically open. This is done as follow:

Right Click the Encrypted File. It will be named *Name.r10Enc*.

From the Menu select 'Open With' and from the cascading menu select 'Other...'.
 You will see this dialog:



Select the R10Cipher application by finding it in the list, highlight it and tick the checkbox 'Always Open With'. Then press the Open button.

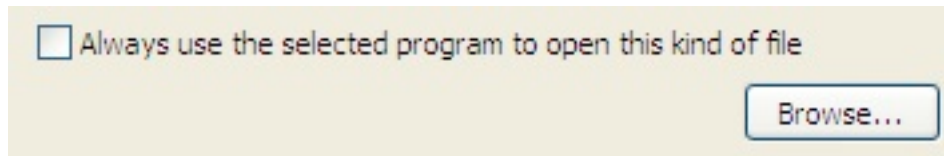
From now on a Double Click on an r10Enc file will open R10Cipher automatically.

Addendum 2: Associating r10Enc on Windows XP

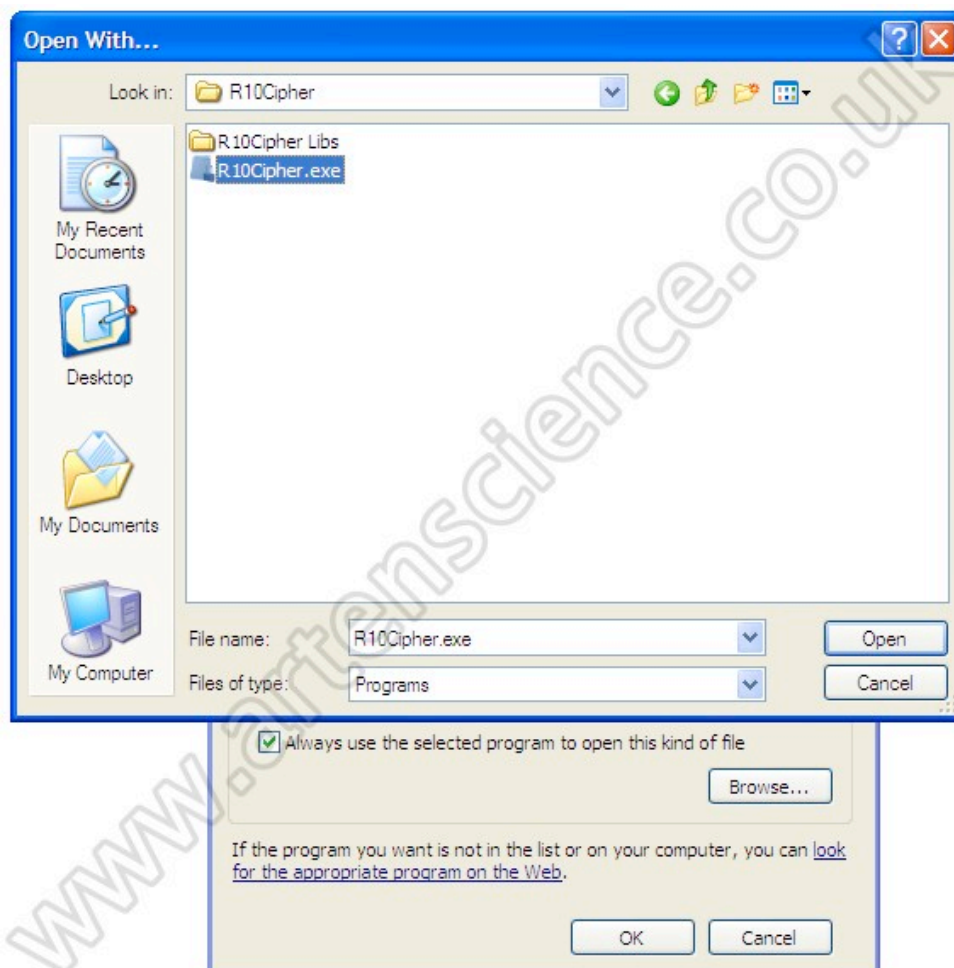
To open a particular program on Windows XP when a particular file type is clicked it is sometimes necessary to first associate that file with the program you would like to automatically open. This is done as follow:

Right Click the Encrypted File. It will be named *Name.r10Enc*.

From the Menu select 'Open With ...' and from the window that opens tick the following checkbox and press the Browse button:



You will see this dialog:



Navigate to the location of R10Cipher, highlight it and press the Open button.

From now on a Double Click on an r10Enc file will open R10Cipher automatically.

Addendum 3: General Guide to Encryption

Encryption is the process of taking readable text and turning it into unreadable text. This is done using an algorithm called a Cipher. To perform the reverse, ie: turn the unreadable text back into readable text it is necessary to know the 'key' or 'shared secret' that was used to perform the encryption.

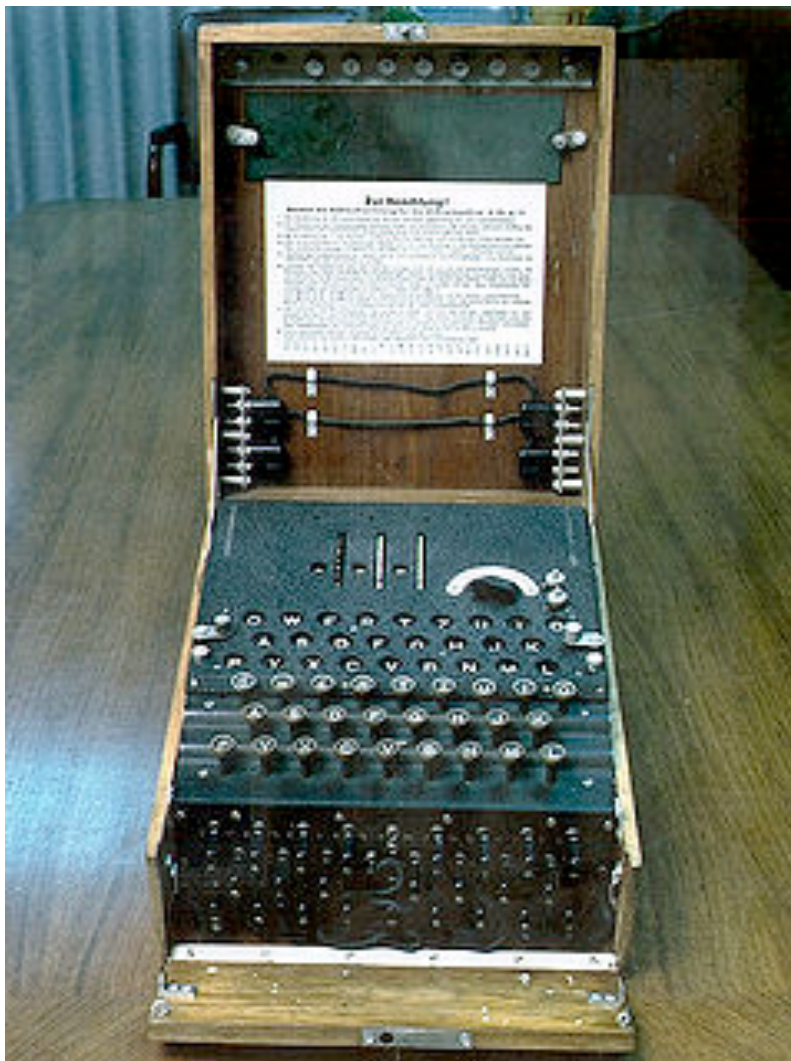
The secret to successfully protecting your information is down to how well the key is kept secret and also the complexity of the key. A key made up of a word or name or similar is easier to find through the process of a 'brute force attack' which basically involves the attempt to find your key using software to automatically try every word in various dictionaries, at a speed of potentially thousands of words per minute.

Encryption allows you to communicate 'in the open' without fear of your information being made available to a third party.

The Enigma Machine.

An encryption device used by the Germans from 1920 until the end of World War II.

Cracking this Cipher, largely due to the work of the men and women, all of them heroes, at Bletchley Park, helped the allies win World War II.



Addendum 4: Blowfish Encryption

Blowfish is a keyed symmetric block cipher which was invented by Bruce Schneier in 1993. It provides excellent encryption and is will continue to do so for the foreseeable future. Blowfish is free of patents, and back doors, and Bruce has placed Blowfish in the public domain.

The strength of Blowfish, as with all keyed ciphers, is down to the length of the key, or shared secret, a key length of 16 characters provides 128 bit encryption.

Blowfish was originally designed as a replacement for DES or IDEA, two aging encryption standards. It's success has been due to the fact that it has been proven strong and the algorithm is available for use without restriction.

More information on Blowfish:

<http://www.schneier.com/paper-blowfish-fse.html>

More Information on Bruce Schneier

<http://www.schneier.com/>

General Computer Security Information

<http://www.grc.com/securitynow.htm>

Addendum 5: Frequently Asked Questions

Q: How do I get support ?

A: <http://getsatisfaction.com/artenscience>

Q: Do you do corporate or site licensing ?

A: Yes, a site / corporate license is available.

Q: Do you do educational licensing ?

A: Yes, please contact licensing@artenscience.com

Q: How do I purchase ?

A: <http://www.artenscience.com/r10cipher/Pages/buy.html>

Q: Are trial versions available ?

A: All our products can be downloaded and used before purchase

Q: Do you offer a money back guarantee ?

A: Yes, 30 Days.

Q: Do you offer telephone support ?

A: Yes, at additional cost.

Addendum 6: Credits

The author is Steven Cholerton.

<http://www.stevencholerton.com>

The icons were supplied by DryIcons.

<http://dryicons.com/>

Coffee supplied by Caffitaly.

<http://www.caffitaly.com/en/offerta-aromi-caffe.asp>

This manual was written on a 8 Core MacPro using Pages.

<http://www.apple.com/iwork/>