MultiObfuscator v2.00 Cryptography & Obfuscation

Advanced file & text locking made easy, safe and free

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Send your suggestions, comments, bug reports, requests
to *embedded@embeddedsw.net* – *Skype "embeddedsw.company"*

MultiObfuscator HomePage

LEGAL REMARKS

Remember: this program was not written for illegal use. Usage of this program that may violate your country's laws is severely forbidden. The author declines all responsibilities for improper use of this program.

No patented code or format has been added to this program.

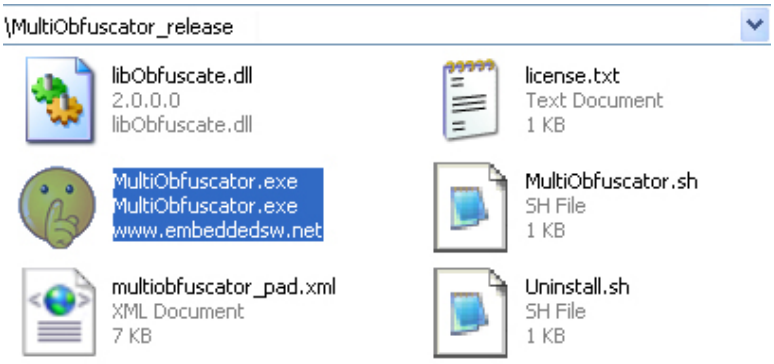
THIS IS A FREE SOFTWARE:

BACK

MultiObfuscator installation: Windows

This program was written to get you maximum privacy and compatibility:

- Portable application, no need to apply any installation procedure
- No dependency on other software/library
- Supported from WinNT up to Win10, 32bit and 64bit architectures



Extract compressed release and run OpenPuff.exe

Direct access to the main panel

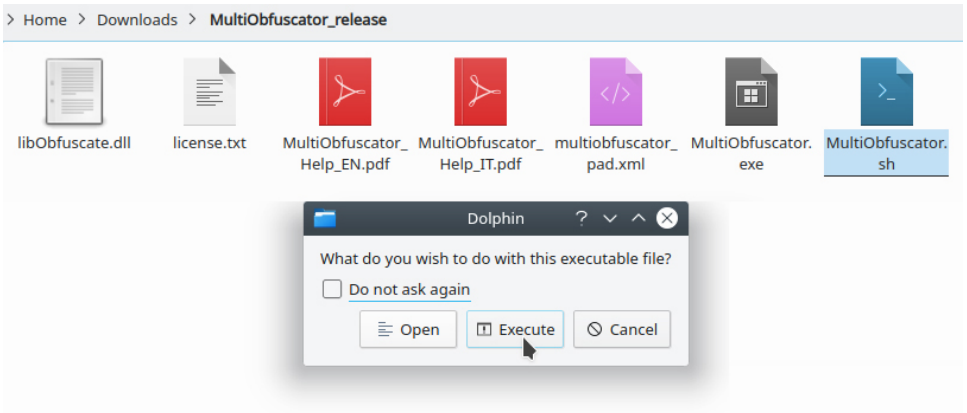
Back

MultiObfuscator installation: Linux

This program was written to get you maximum privacy and compatibility:

- The only dependency is on Wine
- Automated shell to install/run on Ubuntu provided (*MultiObfuscator.sh*)
- Automated shell to uninstall/cleanup on Ubuntu provided (*Uninstall.sh*)

Install/Run:



Extract compressed release and run MultiObfuscator.sh

```
user@user:~/Downloads/MultiObfuscator_release$ ./MultiObfuscator.sh
```

You can also run MultiObfuscator.sh by command line

Wine not installed:

In case Wine is not installed on your system, automated shell will alert you.
Type [y] to confirm you accept to install Wine and continue.

```
Wine is required to run MultiObfuscator. Install now? [y/n]
```

Confirm [y] to accept to install Wine and continue

```
0 upgraded, 145 newly installed, 0 to remove and 0 not upgraded.
Need to get 96,3 MB of archives.
After this operation, 716 MB of additional disk space will be used.
Do you want to continue? [Y/n]
```

Confirm [y] to allow linux to download and install requested packages from internet

```
Selecting previously unselected package libjpeg-turbo8:i386.
Preparing to unpack .../006-libjpeg-turbo8_1.5.2-0ubuntu5.18.04.1_i386.deb ...
Unpacking libjpeg-turbo8:i386 (1.5.2-0ubuntu5.18.04.1) ...
Selecting previously unselected package libogg0:i386.
Preparing to unpack .../007-libogg0_1.3.2-1_i386.deb ...
Unpacking libogg0:i386 (1.3.2-1) ...
Selecting previously unselected package libxinerama1:i386.
Preparing to unpack .../008-libxinerama1_2%3a1.1.3-1_i386.deb ...
Unpacking libxinerama1:i386 (2:1.1.3-1) ...

Progress: [  3%] [###.........................................................
```

Wait for 100%

```
Setting up libtheora0:i386 (1.1.1+dfsg.1-14) ...
Setting up libglx0:i386 (1.0.0-2ubuntu2.1) ...
Setting up gstreamer1.0-plugins-base:i386 (1.14.1-1ubuntu1~ubuntu18.04.1) ...
Setting up wine32:i386 (3.0-1ubuntu1) ...
Setting up libgl1:i386 (1.0.0-2ubuntu2.1) ...
Setting up libglu1-mesa:i386 (9.0.0-2.1build1) ...
Setting up libgl1-mesa-glx:i386 (18.0.5-0ubuntu0~18.04.1) ...
Processing triggers for libc-bin (2.27-3ubuntu1) ...
Processing triggers for wine-stable (3.0-1ubuntu1) ...
Now run ./MultiObfuscator.sh
user@user:~/Downloads/MultiObfuscator_release$
```

Wine has been succesfully installed. Run MultiObfuscator.sh again

WINE INSTALLED:

The first time you run Wine + MultiObfuscator, it may take some time to configure Wine environment.

```
user@user:~/Downloads/MultiObfuscator_release$ ./MultiObfuscator.sh
** Starting Wine + MultiObfuscator. **
** If this is the first time you run MultiObfuscator, it may take some time to initialize. **
wine: created the configuration directory '/home/user/.wine'
0012:err:ole:marshal_object couldn't get IPSFactory buffer for interface {00000131-0000-0000-c000-000000000046}
0012:err:ole:marshal_object couldn't get IPSFactory buffer for interface {6d5140c1-7436-11ce-8034-00aa006009fa}
0012:err:ole:StdMarshalImpl_MarshalInt                                    ub, hres=0x80004002
0012:err:ole:CoMarshalInterface Failed                                    d5140c1-7436-11ce-8034-00aa006009fa}, 80004002
0012:err:ole:get_local_server_stream F
0014:err:ole:marshal_object couldn't g                                    erface {00000131-0000-0000-c000-000000000046}
0014:err:ole:marshal_object couldn't g                                    erface {6d5140c1-7436-11ce-8034-00aa006009fa}
0014:err:ole:StdMarshalImpl_MarshalInterface Failed to create ifstub, hres=0x80004002
0014:err:ole:CoMarshalInterface Failed to marshal the interface {6d5140c1-7436-11ce-8034-00aa006009fa}, 80004002
0014:err:ole:get_local_server_stream Failed: 80004002
```

Wine
The Wine configuration in /home/user/.wine is being updated, please wait...

Wine takes some time to setup environment, first time you run MultiObfuscator.sh

Direct access to the main panel

UNINSTALL/CLEANUP

To fully remove this program, be sure to run the automated shell:

- Removing Wine settings (*~/.wine*)
- Uninstalling Wine and dependecy packages

```
user@user:~/Downloads/MultiObfuscator_release$ ./Uninstall.sh
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages will be REMOVED:
  fonts-wine gstreamer1.0-plugins-base:i386 libasn1-8-heimdal:i38
  libavahi-common-data:i386 libavahi-common3:i386 libbsd0:i386 li
  libcups2:i386 libdbus-1-3:i386 libdrm-amdgpu1:i386 libdrm-intel
  libelf1:i386 libexif12:i386 libexpat1:i386 libffi6:i386 libflac
  libgl1-mesa-dri:i386 libgl1-mesa-glx:i386 libglapi-mesa:i386 li
  libgmp10:i386 libgnutls30:i386 libgphoto2-6:i386 libgphoto2-por
  libgstreamer-plugins-base1.0-0:i386 libgstreamer1.0-0:i386 libh
  libhogweed4:i386 libhx509-5-heimdal:i386 libicu60:i386 libidn2-
  libjpeg8:i386 libk5crypto3:i386 libkeyutils1:i386 libkrb5-26-he
  libllvm6.0:i386 libltdl7:i386 libmpg123-0:i386 libnettle6:i386
  libosmesa6 libosmesa6:i386 libp11-kit0:i386 libpcap0.8:i386 lib
  libroken18-heimdal:i386 libsamplerate0:i386 libsane1:i386 libsa
  libsndfile1:i386 libsndio6.1:i386 libspeexdsp1:i386 libsqlite3-
  libunistring2:i386 libusb-1.0-0:i386 libv4l-0:i386 libv4lconver
  libwind0-heimdal:i386 libwine libwine:i386 libwrap0:i386 libx11
  libxcb-glx0:i386 libxcb-present0:i386 libxcb-render0:i386 libxc
  libxdamage1:i386 libxdmcp6:i386 libxext6:i386 libxfixes3:i386 l
  libxrender1:i386 libxshmfence1:i386 libxslt1.1:i386 libxxf86vm1
0 upgraded, 0 newly installed, 145 to remove and 0 not upgraded.
After this operation, 716 MB disk space will be freed.
Do you want to continue? [Y/n]
```

Run Uninstall.sh and confirm [y] to allow linux to uninstall

```
Removing fonts-wine (3.0-1ubuntu1) ...
Removing gstreamer1.0-plugins-base:i386 (1.14.1-1ubuntu1~ubuntu18.04.1) ...
Removing wine-stable (3.0-1ubuntu1) ...
Removing wine32:i386 (3.0-1ubuntu1) ...
Removing libwine:i386 (3.0-1ubuntu1) ...
Removing libldap-2.4-2:i386 (2.4.45+dfsg-1ubuntu1) ...
Removing libgssapi3-heimdal:i386 (7.5.0+dfsg-1) ...

Progress: [  4%] [#####.......................................................
```

Wait for 100%

BACK

FEATURES: WHY IS THIS CRYPTOGRAPHY TOOL DIFFERENT FROM THE OTHERS?

MultiObfuscator is a professional cryptography tool, with unique features you won't find among any other free or commercial software. MultiObfuscator is 100% free and suitable for highly sensitive data storage and transmission.

Let's take a look at its features

- [LAYERS OF SECURITY]
  Data is encrypted (1), scrambled (2) and whitened (3).
  FEATURES: PROGRAM ARCHITECTURE

  - [LAYER 1 - MODERN MULTI-CRIPTOGRAPHY]
    A set of 16 modern 256bit open-source cryptography algorithms has been joined into a double-password multi-cryptography algorithm (256bit+256bit).

  - [LAYER 2 - CSPRNG BASED SCRAMBLING]
    Encrypted data is always scrambled to break any remaining stream pattern. A new cryptographically secure pseudo random number generator (CSPRNG) is seeded with a third password (256bit) and data is globally shuffled with random indexes.

  - [LAYER 3 - CSPRNG BASED WHITENING]
    Scrambled data is always mixed with a high amount of noise. A new CSPRNG is seeded with a forth password (256bit) and data is bit-by-bit split according to a random permutation.

  - [EXTRA SECURITY - DENIABLE CRYPTOGRAPHY]
    Top secret data can be protected using less secret data as a decoy.
    WHAT IS DENIABLE CRYPTOGRAPHY?

- [SOURCE CODE]
  This program can be considered as a simple Windows GUI to the LIBOBFUSCATE system-independent open-source library. Users and developers are absolutely free to link to the core library (100% of the cryptography & obfuscation code), read it and modify it.

  You're kindly asked to send me any libObfuscate porting/upgrade/customizing/derived sw, in order to analyze them and add them to the project homepage. A central updated official repository will avoid sparseness and unreachability of the project derived code.

BACK

FEATURES: PROGRAM ARCHITECTURE

MultiObfuscator implements multi-cryptography (an advanced kind of PROBABILISTIC ENCRYPTION) joining 16 open-source block-based modern cryptography algorithms, chosen among AES-PROCESS, NESSIE-PROCESS and CRYPTREC-PROCESS. Cypher-Block-Chaining (CBC) wraps these block-based algorithms, letting them to behave as stream-based algorithms.

Whitening is the core of DENIABLE ENCRYPTION

- MultiObfuscator supports data and decoy (a 1st level of deniable encryption)
- MultiObfuscator is, by construction, not able to reconstruct the *Data* ↔ *Offset* association and, at unlocking time, has to slowly guess it by trial and error
  WHAT IS DENIABLE CRYPTOGRAPHY?

Last OpenPuff/MultiObfuscator releases share some unique features with the RUBBERHOSE FILESYSTEM project (1997-2000). Independent and convergent evolution has lead different authors to focus their efforts on a common goal: PLAUSIBLE DENIABILITY.

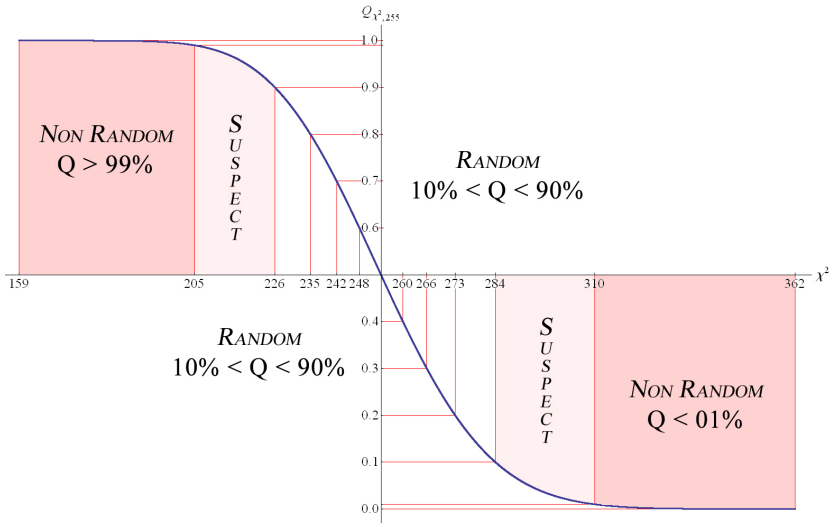
Rubberhose *was* (since it's no more maintained) a really advanced project introducing novel concepts

- **aspects**: users provide different passwords and get, from the same container, different data
- **plausible deniability**: the last-man-standing defense against legal and physical coercion

Years have gone by and, unfortunately, modern attackers wouldn't be deceived any more by whitening-only obfuscation. BATTERIES OF STATISTICAL TESTS for random number generators (NIST, DIEHARD, ENT) would easily detect the RANDOMNESS DEGRADATION of your container and, by direct relationship, the amount of data it's been hidden inside.

MultiObfuscator implements a χ^2-DISTRIBUTION-driven self-adjustment:

- exceeds χ^2-DISTRIBUTION 50% of the times (Q = 0.5), like a genuine random sequence created by RADIOACTIVE DECAY EVENTS
- scores a ≥98% on the NIST randomness rating system



BACK

Features: multi-cryptography & data obfuscation

FAQ 1: Why didn't you simply implement a standard AES-256 or RSA-1024?

Modern open-source cryptography
- has been thoroughly investigated and reviewed by the scientific community
- it's widely accepted as the safest way to secure your data
- fulfills almost every *standard* need of security

MultiObfuscator doesn't support any Conspiracy theory against our privacy (Secret cracking backdoors, intentionally weak cryptography designs, …). There's really no reason not to trust standard modern publicly available cryptography (although some old ciphers have been already Cracked).

Some users, however, are very likely to be hiding very sensitive data, with an *unusually high* need of security. Their secrets need to go through a deep process of data Obfuscation in order to be able to *longer* survive forensic investigation and hardware aided brute force attacks.

FAQ 2: Is multi-cryptography similar to multiple-encryption?

Multi-cryptography is something really different from Multiple-encryption (encrypting more than once). There's really no common agreement about multiple-encryption's reliability. It's thought to be:
- better than single encryption
- weak as the weakest cipher in the encryption queue/process
- worse than single encryption

MultiObfuscator supports the last thesis (worse) and never encrypts already encrypted data.

FAQ 3: Is multi-cryptography similar to random/polymorpihc-cryptography?

Random-cryptography, a.k.a. polymorphic cryptography, is a well-known Snake-oil cryptography. Multi-cryptography is something completely different and never aims to build some better, random or on-the-fly cipher.

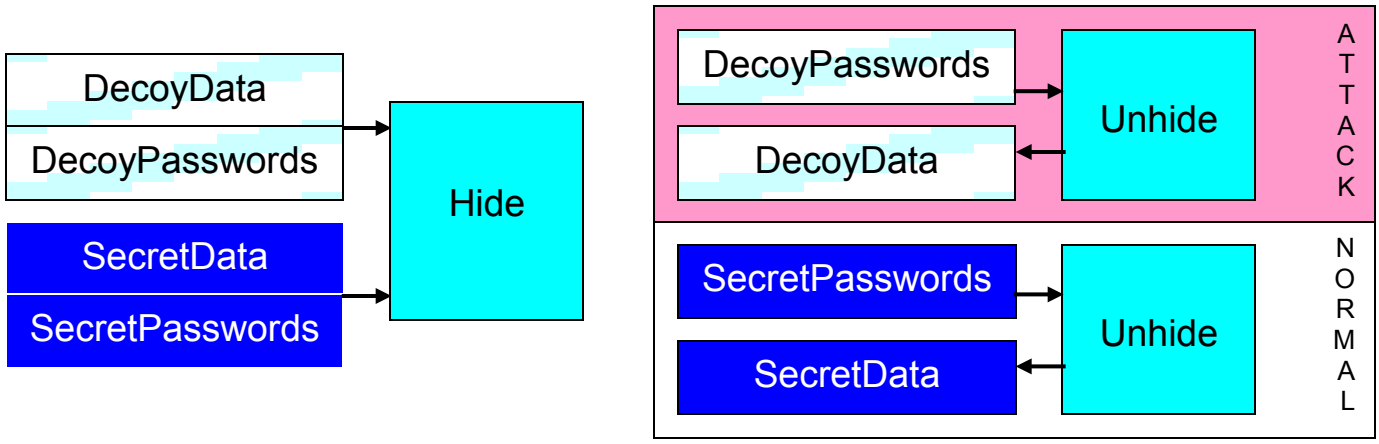
MultiObfuscator only relies on stable modern open-source cryptography.

Features: program architecture

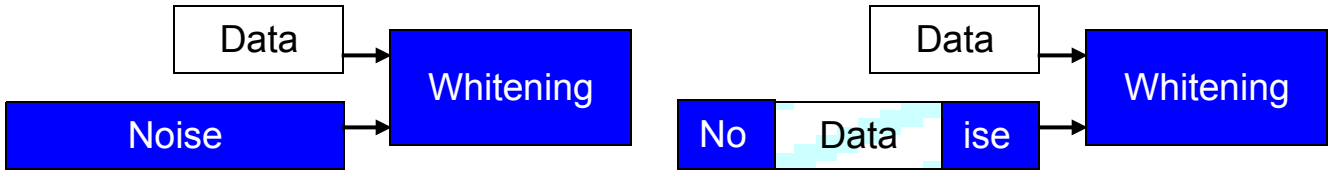
Back

WHAT IS DENIABLE CRYPTOGRAPHY?

DENIABLE ENCRYPTION is a decoy based technique that allows you to convincingly deny the fact that you're hiding **sensitive data**, even if attackers are able to state that you're hiding some data. You only have to provide some expendable decoy data that you would PLAUSIBLY want to keep confidential. It will be revealed to the attacker, claiming that this is all there is.



How is it possible? Encrypted and scrambled data is whitened (FEATURES: PROGRAM ARCHITECTURE) with a high amount of noise. Decoy data can replace some of this noise without loosing final properties of CRYPTANALYSIS RESISTANCE.



Sensitive data and decoy data are encrypted using different passwords. You have to choose two different sets of different passwords.

Example:

Sensibile data: Password (A) "*FirstDataPssw1*"
Password (B) "*SecondDataPssw2*"
Password (C) "*AnotherDataPssw3*"
(A ∩ B) 70%, (A ∩ C) 67%, (B ∩ C) 68%, HAMMING DISTANCE ≥ 25%

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Decoy data: Password (A') "*FirstDecoyPssw1*"
Password (B') "*SecondDecoyPssw2*"
Password (C') "*AnotherDecoyPssw3*"
(A' ∩ B') 72%, (A' ∩ C') 60%, (B' ∩ C') 70%, Hamming distance ≥ 25%

Each password has to be different (at bit level) and at least 8 characters long.

Example: “DataPssw1” (A) “DataPssw2” (B) “DataPssw3” (C)

(A)	01000100	01100001	01110100	01100001	01010000	01110011	01110011	01110111	00110001	…
(B)	01000100	01100001	01110100	01100001	01010000	01110011	01110011	01110111	00110010	…
(C)	01000100	01100001	01110100	01100001	01010000	01110011	01110011	01110111	00110011	…

(A ∩ B) 98%, (A ∩ C) 99%, (B ∩ C) 99%, Hamming distance < 25% = **KO**

Example: “FirstDataPssw1” (A) “SecondDataPssw2” (B) “AnotherDataPssw3” (C)

(A)	01000110	01101001	01110010	01110011	01110100	01000100	01100001	01110100	01100001	…
(B)	01010011	01100101	01100011	01101111	01101110	01100100	01000100	01100001	01110100	…
(C)	01000001	01101110	01101111	01110100	01101000	01100101	01110010	01000100	01100001	…

(A ∩ B) 70%, (A ∩ C) 67%, (B ∩ C) 68%, Hamming distance ≥ 25% = **OK**

You will be asked for

- two **different** sets of different passwords
- a stream of sensitive data
- a stream of decoy data **compatible** (by size) with sensitive data
  $\sum_{k \in \{1, N-1\}} used\_bytes(whiteBlock_k) < Sizeof(Decoy) \leq \sum_{k \in \{1, N\}} used\_bytes(whiteBlock_k)$

Example:

Carriers	Carrier bytes	SensibleData	DecoyData
+Carr (1/N)	32	X	Used
…	2688	X	Used
+Carr (N-1/N)	48	X	Used
+Carr (N/N)	**64**		**Not used**
	Total = 2832	Total = 2795	2720 < Size ≤ 2768

BACK

OPTIONS: NOISE LEVEL

FILE MODE:

- Format: raw binary file
- Fixed size block: Noise + Data = 960 bytes
- Locked output size: ((size + 256) / Data) * 960 ≤ 256 Mb

Noise Level	Noise	Data	Min. Plain → Locked Size	Max. Plain → Locked Size
300%	720	**240**	1 B → 1920 B	64 Mb → 256 Mb
	Whitening 300%: 720 noise / 240 data			
400%	768	**192**	1 B → 1920 B	51 Mb → 256 Mb
	Whitening 400%: 768 noise / 192 data			
500%	800	**160**	1 B → 1920 B	42 Mb → 256 Mb
	Whitening 500%: 800 noise / 160 data			
900%	864	**96**	1 B → 2880 B	25 Mb → 256 Mb
	Whitening 900%: 864 noise / 96 data			
1100%	880	**80**	1 B → 3840 B	21 Mb → 256 Mb
	Whitening 1100%: 880 noise / 80 data			
1400%	896	**64**	1 B → 4800 B	17 Mb → 256 Mb
	Whitening 1400%: 896 noise / 64 data			
1900%	912	**48**	1 B → 5760 B	12 Mb → 256 Mb
	Whitening 1900%: 912 noise / 48 data			
2900%	928	**32**	1 B → 8640 B	8 Mb → 256 Mb
	Whitening 2900%: 928 noise / 32 data			
5900%	944	**16**	1 B → 16320 B	4 Mb → 256 Mb
	Whitening 5900%: 944 noise / 16 data			

TEXT MODE:

- Format: text/email
- Fixed size block: Noise + Data = 960 bytes → 6 bit encoding → 1280 bytes
- Locked output size: ((size + 256) / Data) * 1280 ≤ 256 Kb

Noise Level	Noise	Data	Min. Plain → Locked Size	Max. Plain → Locked Size
300%	720	**240**	1 B → 2560 B	46 Kb → 256 Kb
	Whitening 300%: 720 noise / 240 data			
400%	768	**192**	1 B → 2560 B	36 Kb → 256 Kb
	Whitening 400%: 768 noise / 192 data			
500%	800	**160**	1 B → 2560 B	30 Kb → 256 Kb
	Whitening 500%: 800 noise / 160 data			
900%	864	**96**	1 B → 3840 B	18 Kb → 256 Kb
	Whitening 900%: 864 noise / 96 data			
1100%	880	**80**	1 B → 5120 B	15 Kb → 256 Kb
	Whitening 1100%: 880 noise / 80 data			
1400%	896	**64**	1 B → 6400 B	12 Kb → 256 Kb
	Whitening 1400%: 896 noise / 64 data			
1900%	912	**48**	1 B → 7680 B	9 Kb → 256 Kb
	Whitening 1900%: 912 noise / 48 data			
2900%	928	**32**	1 B → 11520 B	6 Kb → 256 Kb
	Whitening 2900%: 928 noise / 32 data			
5900%	944	**16**	1 B → 21760 B	3 Kb → 256 Kb
	Whitening 5900%: 944 noise / 16 data			

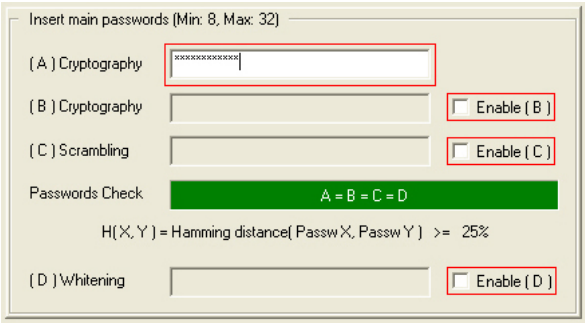
BACK

EASY PASSWORDS SETUP

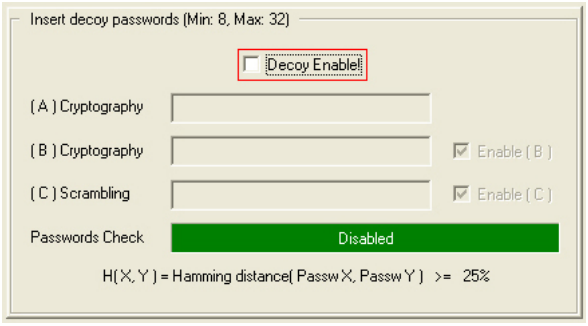
EASY

FILE/TEXT LOCK/UNLOCK – BASE SETUP (1 PASSWORD)

(I)



(II)



(I)	(*Cryptography A*)	First password
	(*Enable B*)	Second password enable/disable
	(*Enable C*)	Third password enable/disable
	(*Enable D*)	Forth password enable/disable
(II)	(*Decoy Enable!*)	Decoy enable/disable

A) Disable decoy

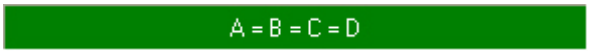
B.1) Disable all optional (Main_B / Main_C / Main_D) passwords
B.2) Enter any (Main_A) password

Disabled (Main_B / Main_C / Main_D) passwords will be set same as (Main_A) password!

CONSTRAINTS:

1) Length (Main_A) ≥ 8

EXAMPLE:



Main: ok

Main_A = “any password”

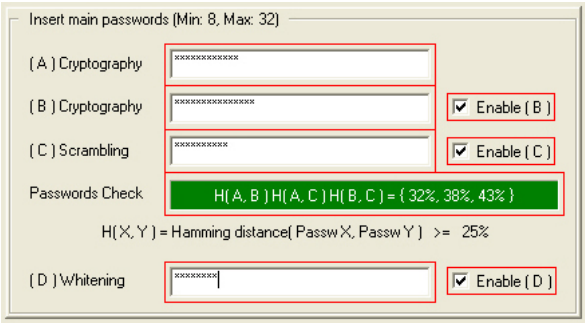
BACK

MEDIUM PASSWORDS SETUP

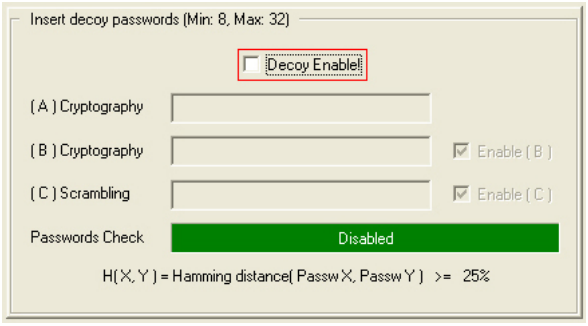
MEDIUM

FILE/TEXT LOCK/UNLOCK – MEDIUM SETUP (4 PASSWORDS)

(I)



(II)



(I)	(*Cryptography A*)	First password
	(*Cryptography B*)	Second password (cryptography CSPRNG)
	(*Scrambling C*)	Third password (scrambling CSPRNG)
	(*Whitening D*)	Forth password (whitening CSPRNG)
	(*Enable B*)	Second password enable/disable
	(*Enable C*)	Third password enable/disable
	(*Enable D*)	Forth password enable/disable
(II)	(*Decoy Enable!*)	Decoy enable/disable

A) Disable decoy

B.1) Enable all or only some of (Main_B / Main_C / Main_D) optional passwords
B.2) Enter different (Main_A / Main_B / Main_C) passwords
B.3) Enter any (Main_D) password

Disabled (Main_B / Main_C / Main_D) passwords will be set same as (Main_A) password!

CONSTRAINTS:

1.1) Length (Main_A) ≥ 8
1.2) Enabled? (Main_B) → Length (Main_B) ≥ 8
1.3) Enabled? (Main_C) → Length (Main_C) ≥ 8
1.4) Enabled? (Main_D) → Length (Main_D) ≥ 8

2.1) Enabled? (Main_B) → HAMMING DISTANCE (Main_A / Main_B) ≥ 25%
2.2) Enabled? (Main_C) → Hamming distance (Main_A / Main_C) ≥ 25%
2.3) Enabled? (Main_B / Main_C) → Hamming distance (Main_B / Main_C) ≥ 25%

EXAMPLE:

H(A, B) H(A, C) H(B, C) = { 2%, 38%, 38% }

Main: Main_A too similar to Main_B

Main_A = "**some_crypt_a**"
Main_B = "**some_crypt_b**"
Main_C = "scramble_c"
Main_D = "whiten_d"

H(A, B) H(A, C) H(B, C) = { 32%, 1%, 33% }

Main: Main_A too similar to Main_C

Main_A = "**some_crypt_a**"
Main_B = "another_crypt_b"
Main_C = "**some_crypt_c**"
Main_D = "whiten_d"

H(A, B) H(A, C) H(B, C) = { 32%, 33%, 0% }

Main: Main_B too similar to Main_C

Main_A = "some_crypt_a"
Main_B = "**another_crypt_b**"
Main_C = "**another_crypt_c**"
Main_D = "whiten_d"

H(A, B) H(A, C) H(B, C) = { 32%, 38%, 43% }

Main: ok

Main_A = "some_crypt_a"
Main_B = "another_crypt_b"
Main_C = "scramble_c"
Main_D = "whiten_d"

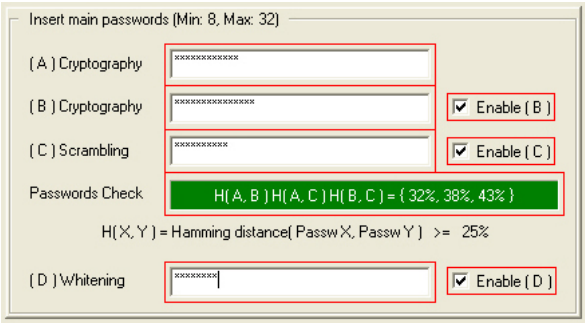
BACK

ADVANCED PASSWORDS SETUP – LOCK

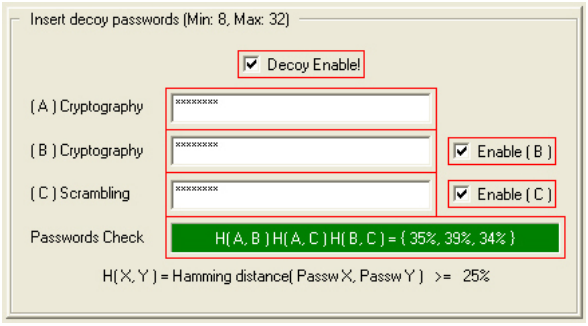
EXPERT

FILE/TEXT LOCK – ADVANCED SETUP (4 PASSWORDS+DECOY)

(I)



(II)



(I)	(*Cryptography A*)	First password
	(*Cryptography B*)	Second password (cryptography CSPRNG)
	(*Scrambling C*)	Third password (scrambling CSPRNG)
	(*Whitening D*)	Forth password (whitening CSPRNG)
	(*Enable B*)	Second password enable/disable
	(*Enable C*)	Third password enable/disable
	(*Enable D*)	Forth password enable/disable
(II)	(*Decoy Enable!*)	Decoy enable/disable
	(*Cryptography A*)	First decoy password
	(*Cryptography B*)	Second decoy password
	(*Scrambling C*)	Third decoy password
	(*Enable B*)	Second decoy password enable/disable
	(*Enable C*)	Third decoy password enable/disable

A) Disable decoy

B.1) Enable all or only some of (Main_B / Main_C / Main_D) passwords
B.2) Enter different (Main_A / Main_B / Main_C) passwords
B.3) Enter any (Main_D) password

Disabled (Main_B / Main_C / Main_D) passwords will be set same as (Main_A) password!

C) Enable decoy

D.1) Enable both or only one of (Decoy_B / Decoy_C) passwords
D.2) Enter different (Decoy_A / Decoy_B / Decoy_C) passwords

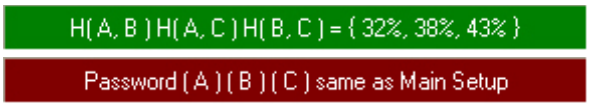
Disabled (Decoy_B / Decoy_C) passwords will be set same as (Decoy_A) password!

CONSTRAINTS:

1.1)			Length (Main_A) ≥ 8
1.2)	Enabled? (Main_B)	→	Length (Main_B) ≥ 8
1.3)	Enabled? (Main_C)	→	Length (Main_C) ≥ 8
1.4)	Enabled? (Main_D)	→	Length (Main_D) ≥ 8
2.1)	Enabled? (Main_B)	→	HAMMING DISTANCE (Main_A / Main_B) ≥ 25%
2.2)	Enabled? (Main_C)	→	Hamming distance (Main_A / Main_C) ≥ 25%
2.3)	Enabled? (Main_B / Main_C)	→	Hamming distance (Main_B / Main_C) ≥ 25%
3.1)			Length (Decoy_A) ≥ 8
3.2)	Enabled? (Decoy_B)	→	Length (Decoy_B) ≥ 8
3.3)	Enabled? (Decoy_C)	→	Length (Decoy_C) ≥ 8
4.1)	Enabled? (Decoy_B)	→	Hamming distance (Decoy_A / Decoy_B) ≥ 25%
4.2)	Enabled? (Decoy_C)	→	Hamming distance (Decoy_A / Decoy_C) ≥ 25%
4.3)	Enabled? (Decoy_B / Decoy_C)	→	Hamming distance (Decoy_B / Decoy_C) ≥ 25%

5.1)	Enabled? (Decoy_B)	→ Enabled? (Main_B)	→ Main_B ≠ Decoy_B
5.2)	Enabled? (Decoy_B)	→ Disabled? (Main_B)	→ Main_A ≠ Decoy_B
5.3)	Enabled? (Decoy_C)	→ Enabled? (Main_C)	→ Main_C ≠ Decoy_C
5.4)	Enabled? (Decoy_C)	→ Disabled? (Main_C)	→ Main_A ≠ Decoy_C

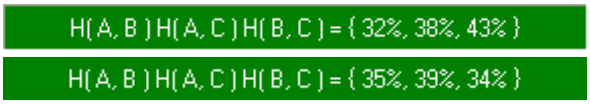
EXAMPLE:



Main: ok

Decoy: Main_A = Decoy_A, …

Main_A = “some_crypt_a” Decoy_A = “**some_crypt_a**”
Main_B = “another_crypt_b” Decoy_B = “**another_crypt_b**”
Main_C = “scramble_c” Decoy_C = “**scramble_c**”
Main_D = “whiten_d”



Main: ok

Decoy: Main_A = Decoy_A, …

Main_A = “some_crypt_a” Decoy_A = “12345678”
Main_B = “another_crypt_b” Decoy_B = “qwertyui”
Main_C = “scramble_c” Decoy_C = “zxcvbnm,”
Main_D = “whiten_d”

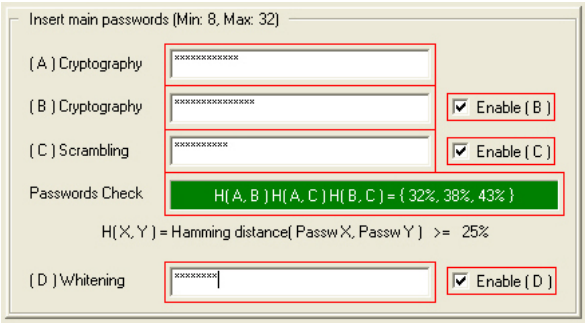
BACK

ADVANCED PASSWORDS SETUP – UNLOCK

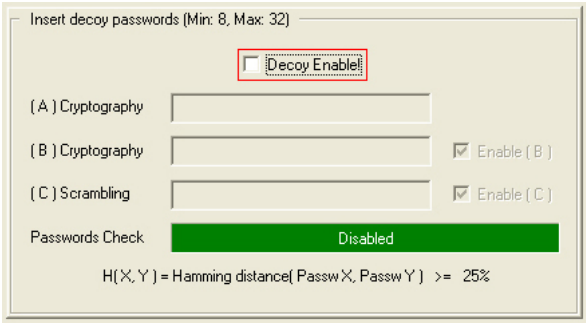
EXPERT

FILE/TEXT UNLOCK – ADVANCED SETUP (4 PASSWORDS+DECOY)

(I)



(II)



(I)	(*Cryptography A*)	First password
	(*Cryptography B*)	Second password (cryptography CSPRNG)
	(*Scrambling C*)	Third password (scrambling CSPRNG)
	(*Whitening D*)	Forth password (whitening CSPRNG)
	(*Enable B*)	Second password enable/disable
	(*Enable C*)	Third password enable/disable
	(*Enable D*)	Forth password enable/disable
(II)	(*Decoy Enable!*)	Decoy enable/disable

EXAMPLE:

Lock	
Main_A = “some_crypt_a” Main_B = “another_crypt_b” Main_C = “scramble_c” Main_D = “**whiten_d**”	Decoy_A = “12345678” Decoy_B = “qwertyui” Decoy_C = “zxcvbnm,”
Secret data unlock	
Main_A = “some_crypt_a” Main_B = “another_crypt_b” Main_C = “scramble_c” Main_D = “**whiten_d**”	DISABLED
Decoy data unlock	
Main_A = “12345678” Main_B = “qwertyui” Main_C = “zxcvbnm,” Main_D = “**whiten_d**”	DISABLED

OK *Main_D password is always shared by main and decoy data*

Lock	
Main_A = “some_crypt_a” Main_B = **DISABLED** Main_C = “scramble_c” Main_D = “whiten_d”	Decoy_A = “12345678” Decoy_B = “qwertyui” Decoy_C = **DISABLED**
Secret data unlock	
Main_A = “some_crypt_a” Main_B = **DISABLED** Main_C = “scramble_c” Main_D = “whiten_d”	DISABLED
Decoy data unlock	
Main_A = “12345678” Main_B = “qwertyui” Main_C = **DISABLED** Main_D = “whiten_d”	DISABLED

OK *Main_B / Main_C / Decoy_B / Decoy_C passwords can be independently disabled*

Lock	
Main_A = “some_crypt_a” Main_B = DISABLED Main_C = “scramble_c” Main_D = **DISABLED**	Decoy_A = “12345678” Decoy_B = “qwertyui” Decoy_C = DISABLED
Secret data unlock	
Main_A = “some_crypt_a” Main_B = DISABLED Main_C = “scramble_c” Main_D = DISABLED	DISABLED
Decoy data unlock	
Main_A = “12345678” Main_B = “qwertyui” Main_C = DISABLED Main_D = “**some_crypt_a**”	DISABLED

This is a WRONG configuration:

- disabled Main_D password is set same as Main_A password
- decoy unlocking (when you’re under attack…) will reveal Main_A password to the attacker!

Never disable Main_D password if you’re planning to use a decoy.

BACK

EASY	

FILE LOCK – BASE SETUP (1 PASSWORD)

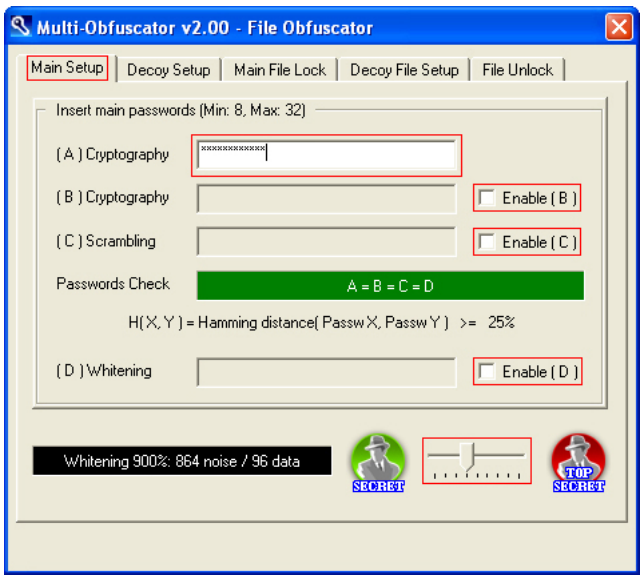
BEGIN:

(*File Lock/Unlock*)	Go to file (binary raw format) panel

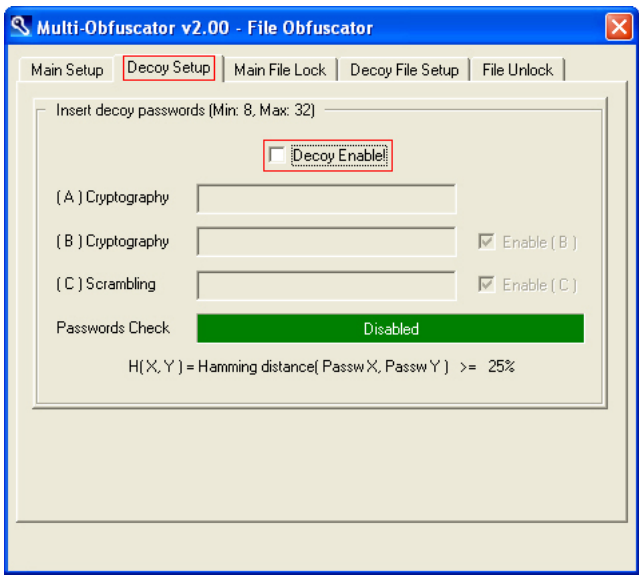
Select *File Lock/Unlock*.

STEP 1 – CHOOSE PASSWORD:

(I)



(II)



(I)	(*Cryptography A*)	First password
	(*Enable B*)	Second password enable/disable
	(*Enable C*)	Third password enable/disable
	(*Enable D*)	Forth password enable/disable
(II)	(*Decoy Enable!*)	Decoy enable/disable

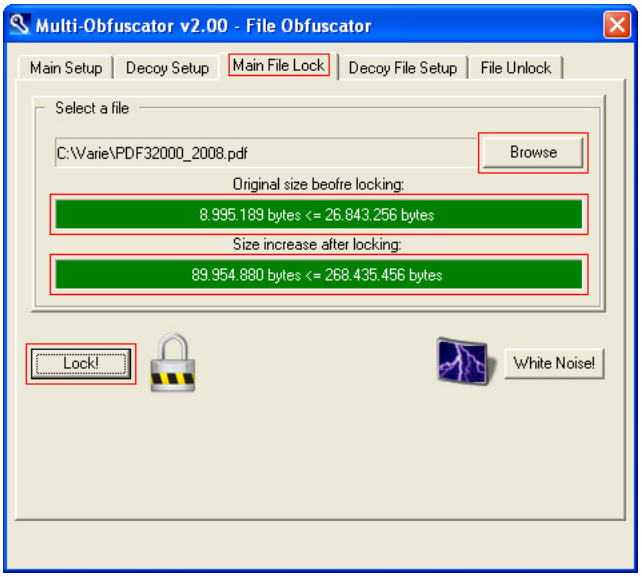
Insert a password and choose a noise level. Full password and noise details are available in special separate sections:

- EASY PASSWORDS SETUP
- OPTIONS: NOISE LEVEL

Base setup, even though looking like a traditional security software, relies on the same multi-layered security architecture as advanced setup.

FEATURES: PROGRAM ARCHITECTURE

STEP 2 – CHOOSE DATA:



(*Browse*)	Select a file
(*Original size before locking*)	Example: 8.995.189
(*Size increase after locking*)	Example: 89.954.880
(*Lock!*)	Start locking

Choose the secret data you want to lock (a single file or a zip/rar/… archive). Secret data will not be overwritten and locked data will be saved to a different folder. File/archive name will not be saved to the locked data, allowing renaming and unlocking secret data with a different name.

EXAMPLE:

- MultiObfuscator: C:\…\dir1\xxx.pdf [9 Mb] → C:\...\dir2\xxx.pdf [90 Mb]
- Rename: C:\...\dir2\xxx.pdf → UsbKey:\...\yyy.pdf
- MultiObfuscator: UsbKey:\…\yyy.pdf [90 Mb] → D:\…\yyy.pdf [9 Mb]

There's a maximum locked size constraint of 256 Mb and, depending on the noise level, there's also a maximum plain size constraint. Little files (up to 4 Mb) will let you free to choose any noise level. Medium and large files (up to 64 Mb) will force you to choose a lower compatible (by size) noise level.

EXAMPLE:

- Noise level: 900%
- Original size before locking: 8.995.189 bytes ≤ 25 Mb
- Size after locking: ((8.995.189 + 256) / 96) * 960 = 89.954.880 bytes ≤ 256 Mb

Noise Level	Noise	Data	Min. Plain → Locked Size	Max. Plain → Locked Size
900%	864	**96**	1 B → 2880 B	**25 Mb → 256 Mb**

OPTIONS: NOISE LEVEL

BACK

EASY	

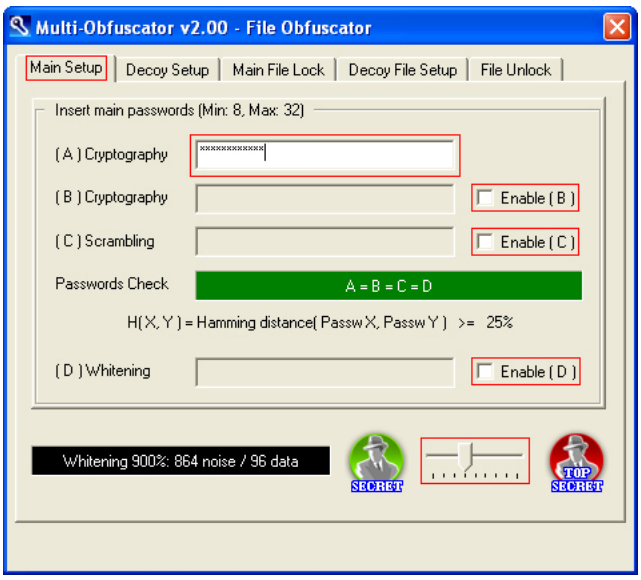
FILE UNLOCK – BASE SETUP (1 PASSWORD)

BEGIN:

(*File Lock/Unlock*)	Go to file (binary raw format) panel

Select *File Lock/Unlock*.

STEP 1 – CHOOSE PASSWORD:

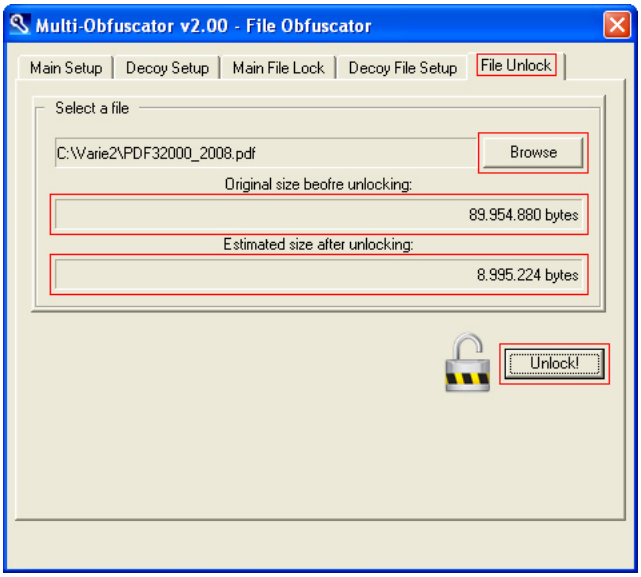


(*Cryptography A*)	First password
(*Enable B*)	Second password enable/disable
(*Enable C*)	Third password enable/disable
(*Enable D*)	Forth password enable/disable

Set same password and noise level as locking time. Full password and noise details are available in special separate sections:

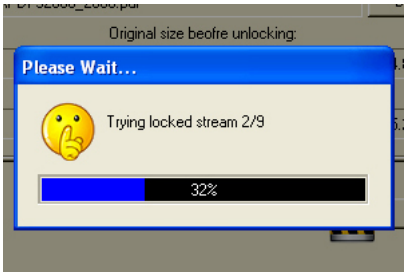
- EASY PASSWORDS SETUP
- OPTIONS: NOISE LEVEL

STEP 2 – CHOOSE DATA:



(*Browse*)	Select a locked file
(*Original size before unlocking*)	Example: 89.954.880
(*Estimated size after unlocking*)	Example: 8.995.224
(*Unlock!*)	Start unlocking

Choose the locked data you want to unlock. Locked data will not be overwritten and unlocked secret data will be saved to a different folder.



Aspect number: (960 / Data) – 1
-1 because of χ^2-self-adjustment

Noise Level	Noise	Data	Aspects
300%	720	**240**	4 - 1
400%	768	**192**	5 - 1
500%	800	**160**	6 - 1
900%	864	**96**	10 - 1
1100%	880	**80**	12 - 1
1400%	896	**64**	15 - 1
1900%	912	**48**	20 - 1
2900%	928	**32**	30 - 1
5900%	944	**16**	60 - 1

Unlocking, even when passwords and locked data are ok, may take a long time due to the aspect number. The higher the noise level is, the more the aspects are. MultiObfuscator, by design, doesn't know which aspect was selected at locking time and has to slowly guess it by trial and error.

FEATURES: PROGRAM ARCHITECTURE

BACK

FILE LOCK – MEDIUM SETUP (4 PASSWORDS)

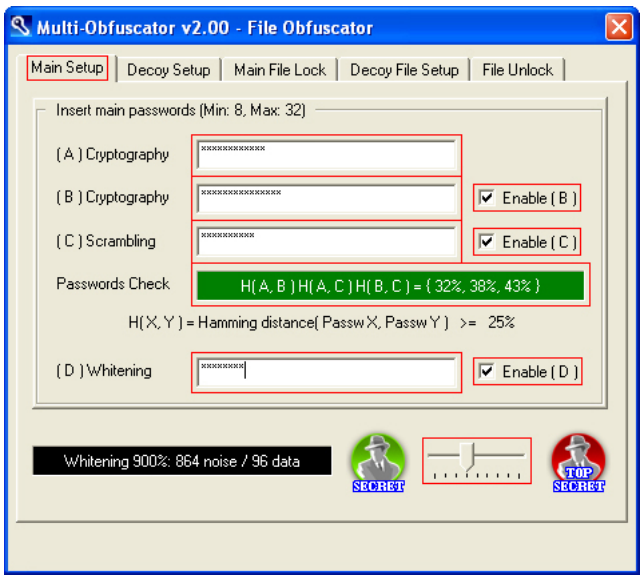
BEGIN:

(*File Lock/Unlock*)	Go to file (binary raw format) panel

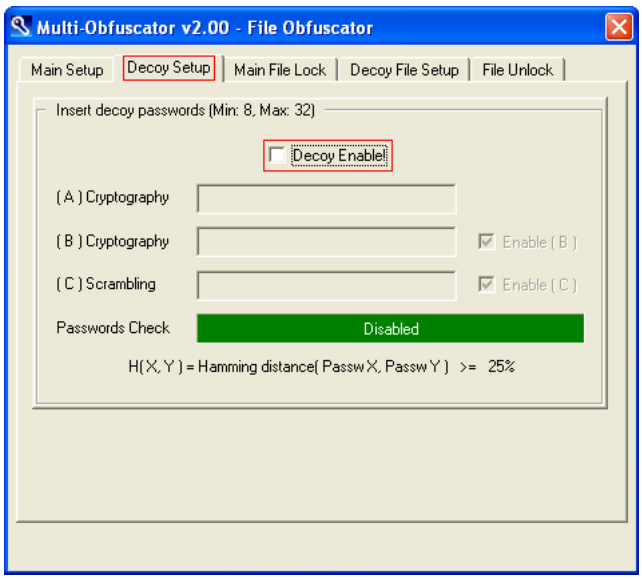
Select *File Lock/Unlock*.

STEP 1 – CHOOSE PASSWORDS:

(I)



(II)



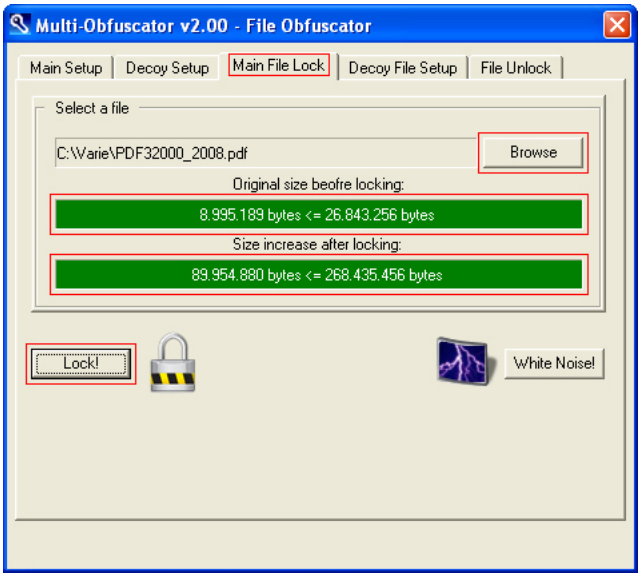
(I)	(*Cryptography A*)	First password
	(*Cryptography B*)	Second password (cryptography CSPRNG)
	(*Scrambling C*)	Third password (scrambling CSPRNG)
	(*Whitening D*)	Forth password (whitening CSPRNG)
	(*Enable B*)	Second password enable/disable
	(*Enable C*)	Third password enable/disable
	(*Enable D*)	Forth password enable/disable
(II)	(*Decoy Enable!*)	Decoy enable/disable

Insert a set of passwords and choose a noise level. Full password and noise details are available in special separate sections:

- MEDIUM PASSWORDS SETUP
- OPTIONS: NOISE LEVEL

Medium setup allows full usage of the multi-layered security architecture.
FEATURES: PROGRAM ARCHITECTURE

STEP 2 – CHOOSE DATA:



(*Browse*)	Select a file
(*Original size before locking*)	Example: 8.995.189
(*Size increase after locking*)	Example: 89.954.880
(*Lock!*)	Start locking

Choose the secret data you want to lock (a single file or a zip/rar/… archive). Secret data will not be overwritten and locked data will be saved to a different folder. File/archive name will not be saved to the locked data, allowing renaming and unlocking secret data with a different name.

EXAMPLE:

- MultiObfuscator: C:\…\dir1\xxx.pdf [9 Mb] → C:\...\dir2\xxx.pdf [90 Mb]
- Rename: C:\...\dir2\xxx.pdf → UsbKey:\...\yyy.pdf
- MultiObfuscator: UsbKey:\…\yyy.pdf [90 Mb] → D:\…\yyy.pdf [9 Mb]

There's a maximum locked size constraint of 256 Mb and, depending on the noise level, there's also a maximum plain size constraint. Little files (up to 4 Mb) will let you free to choose any noise level. Medium and large files (up to 64 Mb) will force you to choose a lower compatible (by size) noise level.

EXAMPLE:

- Noise level: 900%
- Original size before locking: 8.995.189 bytes ≤ 25 Mb
- Size after locking: ((8.995.189 + 256) / 96) * 960 = 89.954.880 bytes ≤ 256 Mb

Noise Level	Noise	Data	Min. Plain → Locked Size	Max. Plain → Locked Size
900%	864	**96**	1 B → 2880 B	**25 Mb → 256 Mb**

OPTIONS: NOISE LEVEL

BACK

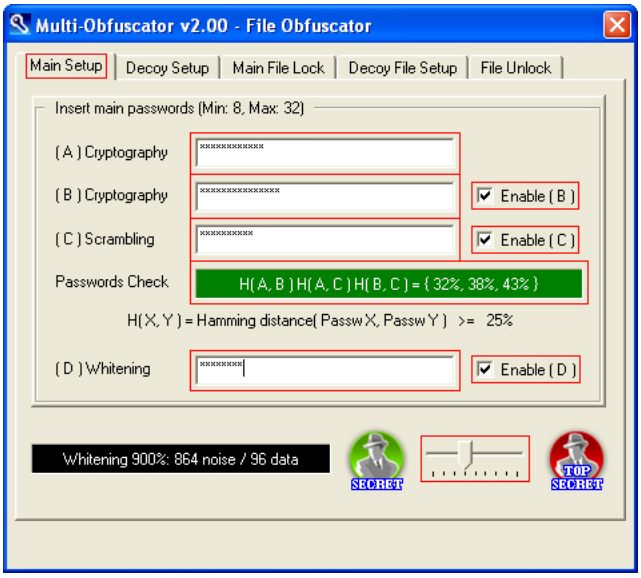
FILE UNLOCK – MEDIUM SETUP (4 PASSWORDS)

BEGIN:

(*File Lock/Unlock*)	Go to file (binary raw format) panel

Select *File Lock/Unlock*.

STEP 1 – CHOOSE PASSWORDS:

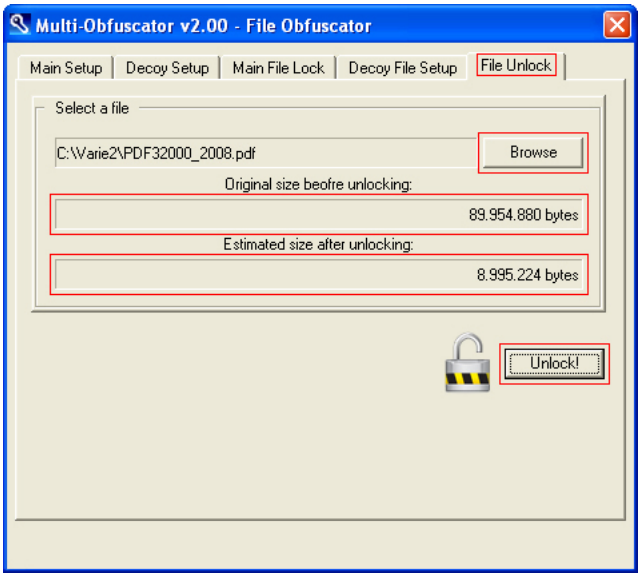


(*Cryptography A*)	First password
(*Cryptography B*)	Second password (cryptography CSPRNG)
(*Scrambling C*)	Third password (scrambling CSPRNG)
(*Whitening D*)	Forth password (whitening CSPRNG)
(*Enable B*)	Second password enable/disable
(*Enable C*)	Third password enable/disable
(*Enable D*)	Forth password enable/disable

Set same set of passwords and noise level as locking time. Full password and noise details are available in special separate sections:

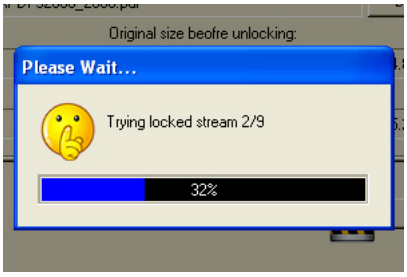
- MEDIUM PASSWORDS SETUP
- OPTIONS: NOISE LEVEL

STEP 2 – CHOOSE DATA:



(*Browse*)	Select a locked file
(*Original size before unlocking*)	Example: 89.954.880
(*Estimated size after unlocking*)	Example: 8.995.224
(*Unlock!*)	Start unlocking

Choose the locked data you want to unlock. Locked data will not be overwritten and unlocked secret data will be saved to a different folder.



Aspect number: (960 / Data) – 1
-1 because of χ^2-self-adjustment

Noise Level	Noise	Data	Aspects
300%	720	**240**	4 - 1
400%	768	**192**	5 - 1
500%	800	**160**	6 - 1
900%	864	**96**	10 - 1
1100%	880	**80**	12 - 1
1400%	896	**64**	15 - 1
1900%	912	**48**	20 - 1
2900%	928	**32**	30 - 1
5900%	944	**16**	60 - 1

Unlocking, even when passwords and locked data are ok, may take a long time due to the aspect number. The higher the noise level is, the more the aspects are. MultiObfuscator, by design, doesn't know which aspect was selected at locking time and has to slowly guess it by trial and error.

FEATURES: PROGRAM ARCHITECTURE

BACK

EXPERT

FILE LOCK – ADVANCED SETUP (4 PASSWORDS+DECOY)

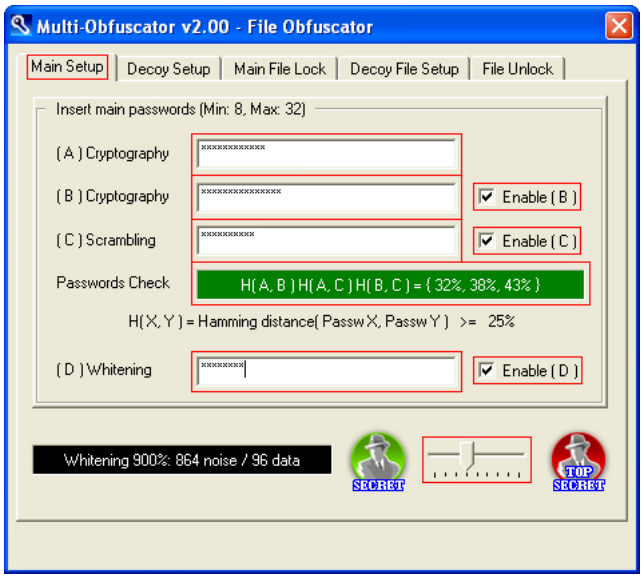
BEGIN:

(*File Lock/Unlock*)	Go to file (binary raw format) panel

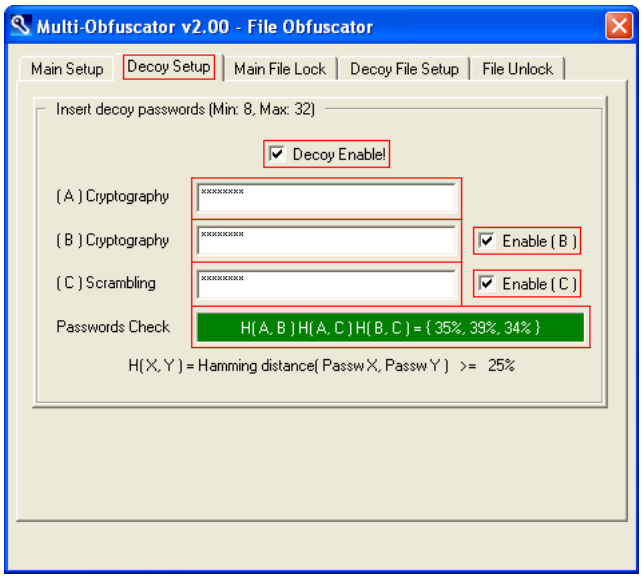
Select *File Lock/Unlock*.

STEP 1 – CHOOSE PASSWORDS:

(I)



(II)

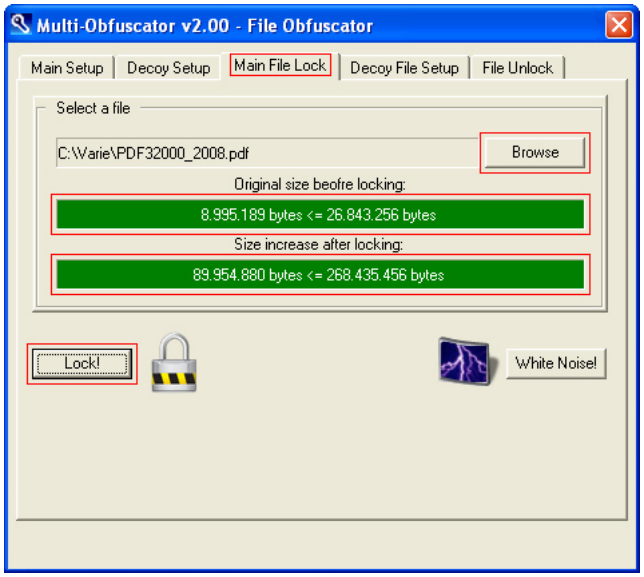


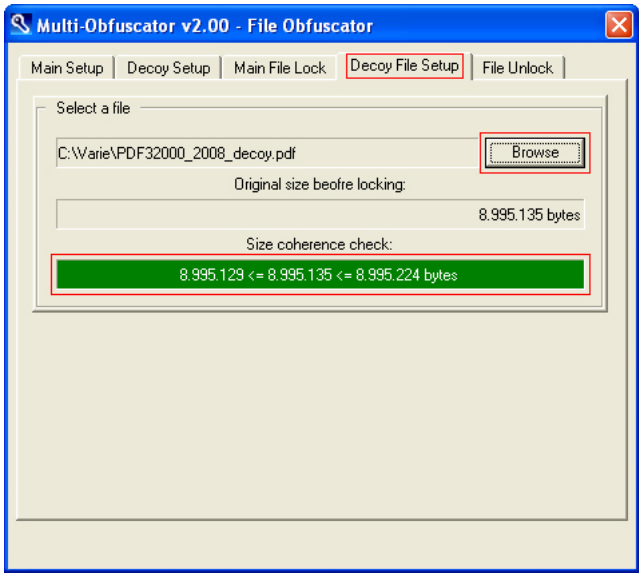
(I)	(*Cryptography A*)	First password
	(*Cryptography B*)	Second password (cryptography CSPRNG)
	(*Scrambling C*)	Third password (scrambling CSPRNG)
	(*Whitening D*)	Forth password (whitening CSPRNG)
	(*Enable B*)	Second password enable/disable
	(*Enable C*)	Third password enable/disable
	(*Enable D*)	Forth password enable/disable
(II)	(*Decoy Enable!*)	Decoy enable/disable
	(*Cryptography A*)	First decoy password
	(*Cryptography B*)	Second decoy password
	(*Scrambling C*)	Third decoy password
	(*Enable B*)	Second decoy password enable/disable
	(*Enable C*)	Third decoy password enable/disable

Insert a set of passwords, a set of decoy passwords and choose a noise level. Full password and noise details are available in special separate sections:

- ADVANCED PASSWORDS SETUP – LOCK
- OPTIONS: NOISE LEVEL
- FEATURES: PROGRAM ARCHITECTURE

STEP 2 – CHOOSE DATA:

(I) 

(II) 

(I)	(*Browse*)	Select a file
	(*Original size before locking*)	Example: 8.995.189
	(*Size increase after locking*)	Example: 89.954.880
	(*Lock!*)	Start locking
(II)	(*Browse*)	Select a decoy file
	(*Size coherence check*)	Example: 8.995.135

Choose the secret data and a compatible (by size) decoy data you want to lock.

EXAMPLE:

- Noise level: 900%
- Original size before locking: 8.995.189 bytes ≤ 25 Mb
- Size after locking: ((8.995.189 + 256) / 96) * 960 = 89.954.880 bytes ≤ 256 Mb
- Decoy size: (((8.995.129 ≤ x ≤ 8.995.224) + 256) / 96) * 960 = 89.954.880 bytes ≤ 256 Mb

Noise Level	Noise	Data	Min. Plain → Locked Size	Max. Plain → Locked Size
900%	864	**96**	1 B → 2880 B	**25 Mb → 256 Mb**

Be aware that:
- the higher the noise level is, the less the data bytes per block are
- the less the data bytes per block are, the narrower the decoy size range is

Minimum (300%) → Data = 240 → inf ≤ x ≤ sup → sup - inf + 1 = 240 bytes
Maximum (5900%) → Data = 16 → inf ≤ x ≤ sup → sup - inf + 1 = 16 bytes

Be sure to read also the intermediate section
FILE LOCK – MEDIUM SETUP (4 PASSWORDS)

BACK

EXPERT

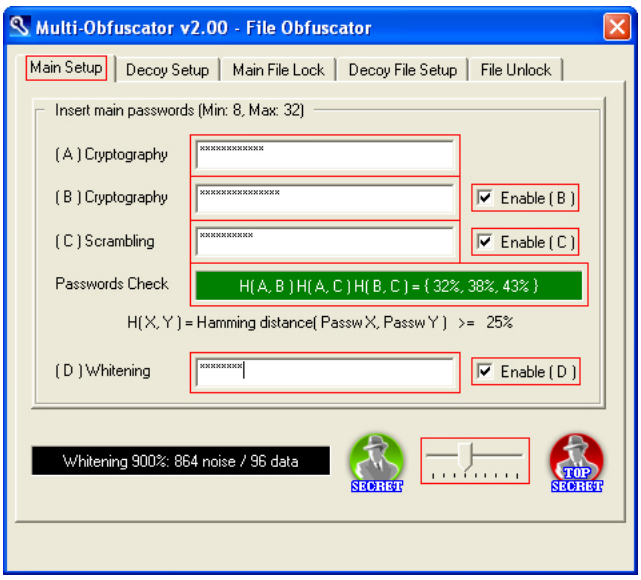
FILE UNLOCK – ADVANCED SETUP (4 PASSWORDS+DECOY)

BEGIN:

(*File Lock/Unlock*)	Go to file (binary raw format) panel

Select *File Lock/Unlock*.

STEP 1 – CHOOSE PASSWORDS:



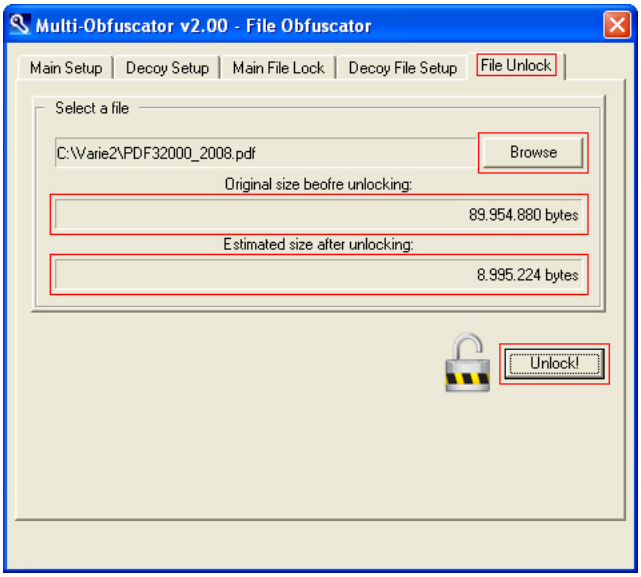
(*Cryptography A*)	First password
(*Cryptography B*)	Second password (cryptography CSPRNG)
(*Scrambling C*)	Third password (scrambling CSPRNG)
(*Whitening D*)	Forth password (whitening CSPRNG)
(*Enable B*)	Second password enable/disable
(*Enable C*)	Third password enable/disable
(*Enable D*)	Forth password enable/disable

Set same set of passwords (secret to get secret data, decoy to get decoy data) and noise level as locking time. Full password and noise details are available in special separate sections:

- ADVANCED PASSWORDS SETUP – UNLOCK
- OPTIONS: NOISE LEVEL

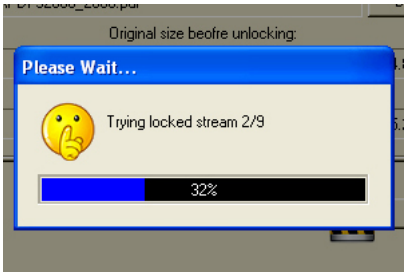
Detailed decoy details are available here:
WHAT IS DENIABLE CRYPTOGRAPHY?

STEP 2 – CHOOSE DATA:



(*Browse*)	Select a locked file
(*Original size before unlocking*)	Example: 89.954.880
(*Estimated size after unlocking*)	Example: 8.995.224
(*Unlock!*)	Start unlocking

Choose the locked data you want to unlock. Locked data will not be overwritten and unlocked data (secret or decoy, depending on the set of passwords) will be saved to a different folder.



Aspect number: (960 / Data) – 1
-1 because of χ^2-self-adjustment

Noise Level	Noise	Data	Aspects
300%	720	**240**	4 - 1
400%	768	**192**	5 - 1
500%	800	**160**	6 - 1
900%	864	**96**	10 - 1
1100%	880	**80**	12 - 1
1400%	896	**64**	15 - 1
1900%	912	**48**	20 - 1
2900%	928	**32**	30 - 1
5900%	944	**16**	60 - 1

Unlocking, even when passwords and locked data are ok, may take a long time due to the aspect number. The higher the noise level is, the more the aspects are. MultiObfuscator, by design, doesn't know which aspect was selected at locking time and has to slowly guess it by trial and error.

FEATURES: PROGRAM ARCHITECTURE

BACK

EXPERT

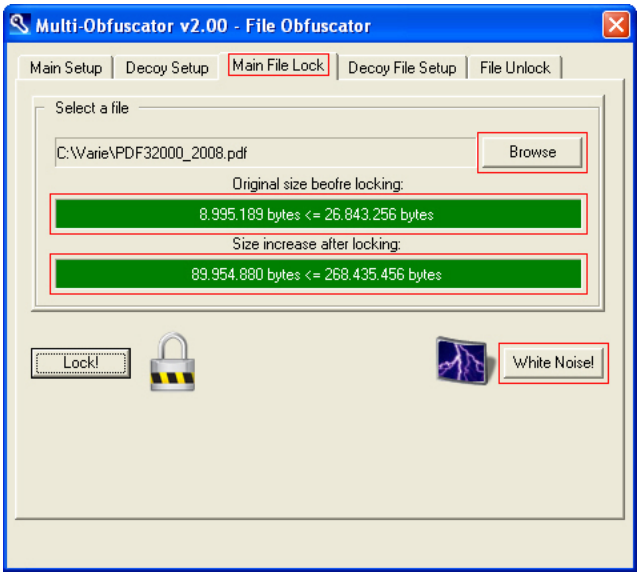
WHITE NOISE AS A DECOY (FILE)

BEGIN:

(*File Lock/Unlock*)	Go to file (binary raw format) panel

Select *File Lock/Unlock*.

STEP 1 – CHOOSE DATA:



(*Browse*)	Select a file
(*Original size before locking*)	Example: 8.995.189
(*Size increase after locking*)	Example: 89.954.880
(*White Noise!*)	Start randomizing

Locked files are statistically indistinguishable from void randomized files. Advanced users will be able to add void/fake containers to the sensitive ones, in order to waste attackers' time. This task will save white noise only to a fake container compatible (by size) with the selected file.

FEATURES: PROGRAM ARCHITECTURE

EXAMPLE:

- Noise level: 900%
- Size after locking: ((8.995.189 + 256) / 96) * 960 = **89.954.880** bytes ≤ 256 Mb
- White noise size: **89.954.880** bytes

Noise Level	Noise	Data	Min. Plain → Locked Size	Max. Plain → Locked Size
900%	864	**96**	1 B → 2880 B	25 Mb → 256 Mb

OPTIONS: NOISE LEVEL

BACK

EASY	

TEXT LOCK – BASE SETUP (1 PASSWORD)

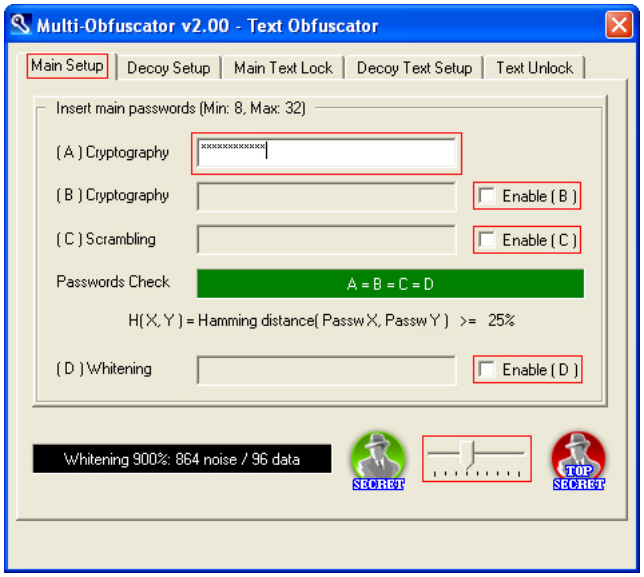
BEGIN:

(*Text Lock/Unlock*)	Go to text (email format) panel

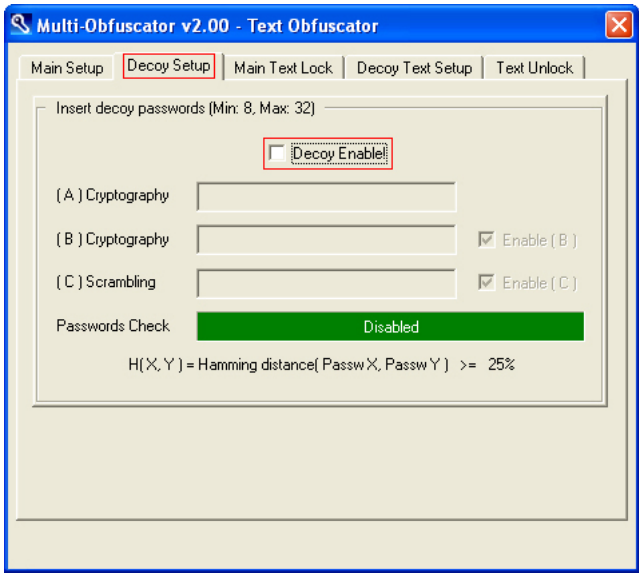
Select *Text Lock/Unlock*.

STEP 1 – CHOOSE PASSWORD:

(I)



(II)



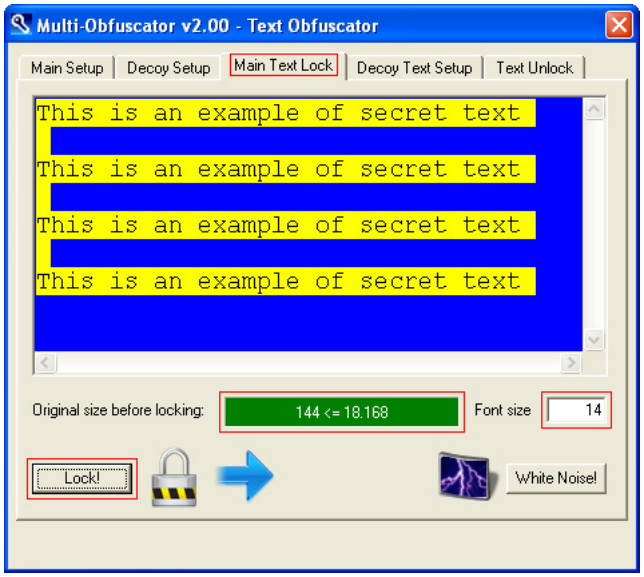
(I)	(*Cryptography A*)	First password
	(*Enable B*)	Second password enable/disable
	(*Enable C*)	Third password enable/disable
	(*Enable D*)	Forth password enable/disable
(II)	(*Decoy Enable!*)	Decoy enable/disable

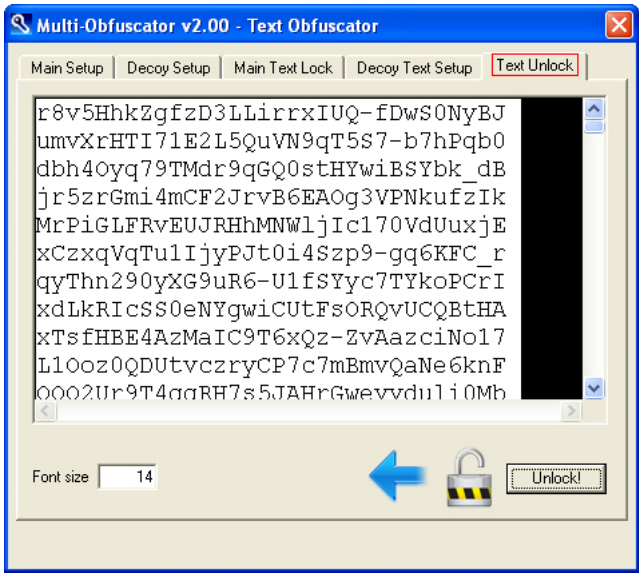
Insert a password and choose a noise level. Full password and noise details are available in special separate sections:

- EASY PASSWORDS SETUP
- OPTIONS: NOISE LEVEL

Base setup, even though looking like a traditional security software, relies on the same multi-layered security architecture as advanced setup.
FEATURES: PROGRAM ARCHITECTURE

STEP 2 – CHOOSE TEXT:

(I) 

(II) 

(I)	< TextEdit – blue window >	Enter/paste a text
	(*Original size before locking*)	Example: 144
	(*Font size*)	Text font size
	(*Lock!*)	Start locking

Choose the secret text you want to lock. Secret text will not be overwritten and locked text will be saved to the *Text Unlock* window, ready to be cut and pasted.

There's a maximum locked size constraint of 256 Kb that, depending on the noise level, will also add a maximum plain size constraint. Little files (up to 3 Kb) will let you free to choose any noise level. Medium and large files (up to 46 Kb) will force you to choose a lower compatible (by size) noise level.

EXAMPLE:

- Noise level: 900%
- Original size before locking: 144 bytes ≤ 18 Kb
- Size after locking: ((144 + 256) / 96) * 1280 = 6.400 bytes ≤ 256 Kb

Noise Level	Noise	Data	Min. Plain → Locked Size	Max. Plain → Locked Size
900%	864	**96**	1 B → 3840 B	**18 Kb → 256 Kb**

OPTIONS: NOISE LEVEL

BACK

EASY	

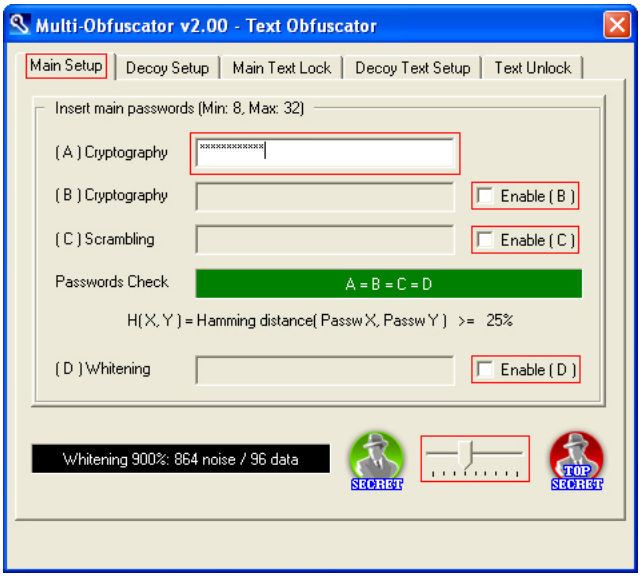
TEXT UNLOCK – BASE SETUP (1 PASSWORD)

BEGIN:

(*Text Lock/Unlock*)	Go to text (email format) panel

Select *Text Lock/Unlock*.

STEP 1 – CHOOSE PASSWORD:

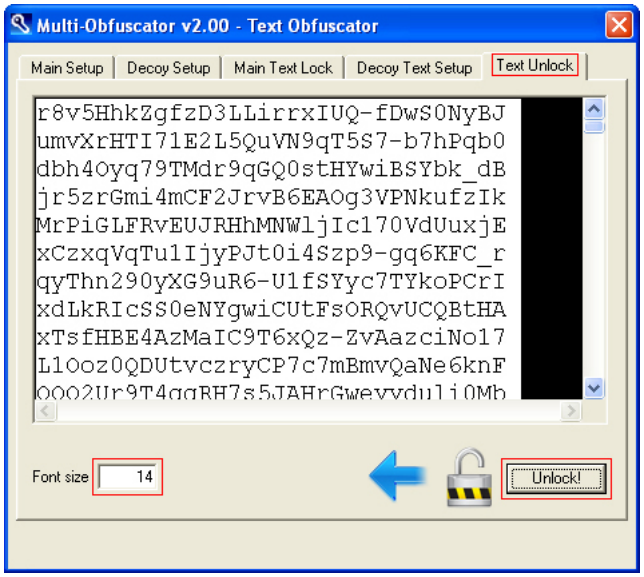


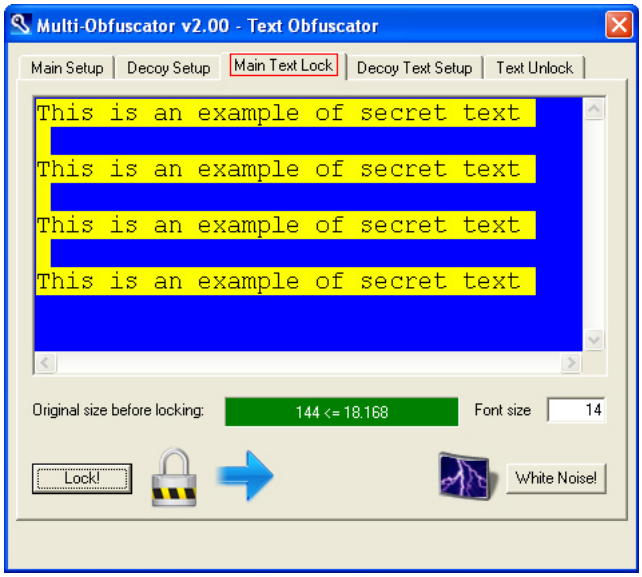
(*Cryptography A*)	First password
(*Enable B*)	Second password enable/disable
(*Enable C*)	Third password enable/disable
(*Enable D*)	Forth password enable/disable

Set same password and noise level as locking time. Full password and noise details are available in special separate sections:

- EASY PASSWORDS SETUP
- OPTIONS: NOISE LEVEL

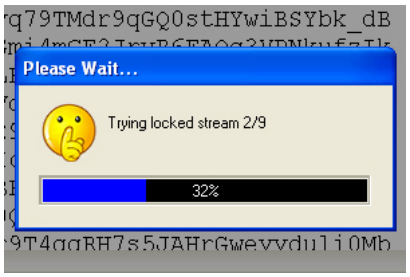
STEP 2 – CHOOSE TEXT:

(I) 

(II) 

(I) < TextEdit – black window >	Enter/paste a locked text
(*Font size*)	Text font size
(*Unlock!*)	Start unlocking

Choose the locked text you want to unlock. Locked text will not be overwritten and unlocked secret text will be saved to the *Main Text Lock* window, ready to be cut and pasted.



Aspect number: (960 / Data) – 1
-1 because of χ^2-self-adjustment

Noise Level	Noise	Data	Aspects
300%	720	**240**	4 - 1
400%	768	**192**	5 - 1
500%	800	**160**	6 - 1
900%	864	**96**	10 - 1
1100%	880	**80**	12 - 1
1400%	896	**64**	15 - 1
1900%	912	**48**	20 - 1
2900%	928	**32**	30 - 1
5900%	944	**16**	60 - 1

Unlocking, even when passwords and locked text are ok, may take a long time due to the aspect number. The higher the noise level is, the more the aspects are. MultiObfuscator, by design, doesn't know which aspect was selected at locking time and has to slowly guess it by trial and error.

FEATURES: PROGRAM ARCHITECTURE

BACK

TEXT LOCK – MEDIUM SETUP (4 PASSWORDS)

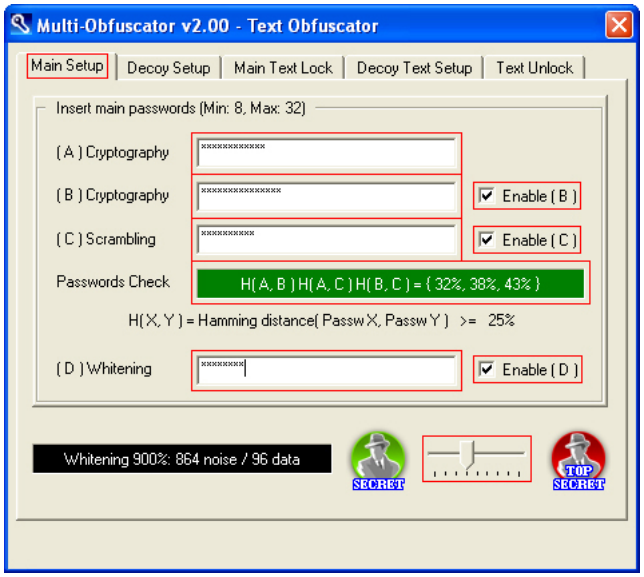
BEGIN:

(*Text Lock/Unlock*)	Go to text (email format) panel

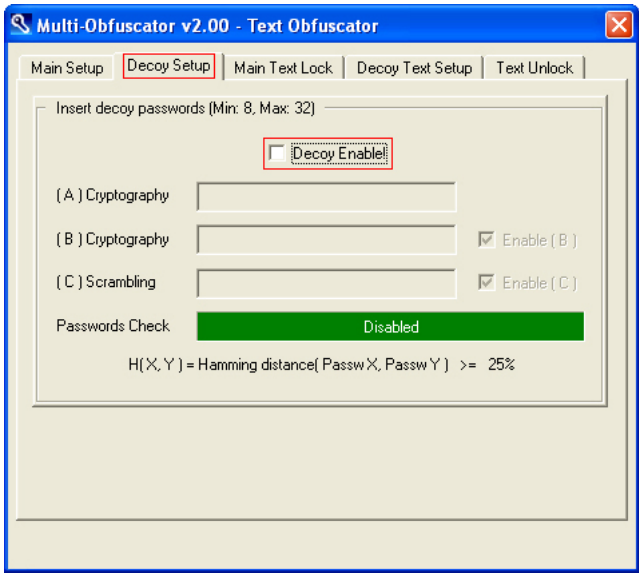
Select *Text Lock/Unlock*.

STEP 1 – CHOOSE PASSWORDS:

(I)



(II)



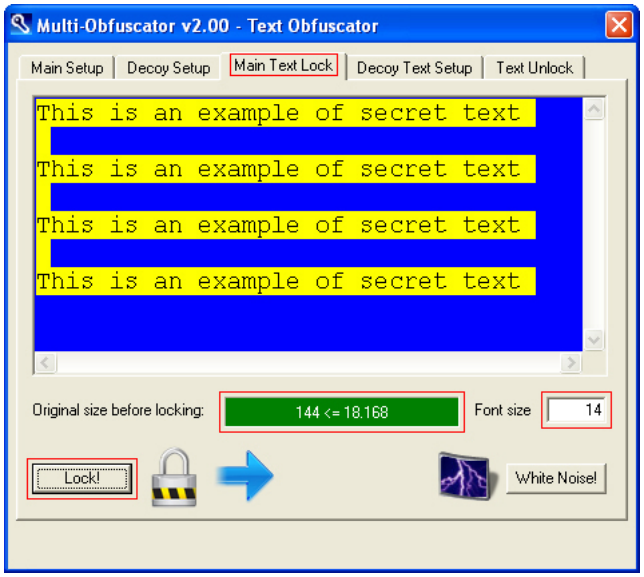
(I)	(*Cryptography A*)	First password
	(*Cryptography B*)	Second password (cryptography CSPRNG)
	(*Scrambling C*)	Third password (scrambling CSPRNG)
	(*Whitening D*)	Forth password (whitening CSPRNG)
	(*Enable B*)	Second password enable/disable
	(*Enable C*)	Third password enable/disable
	(*Enable D*)	Forth password enable/disable
(II)	(*Decoy Enable!*)	Decoy enable/disable

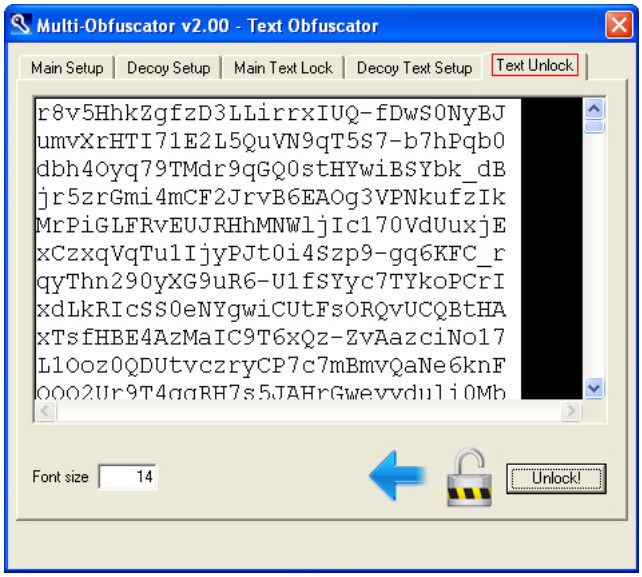
Insert a set of passwords and choose a noise level. Full password and noise details are available in special separate sections:

- MEDIUM PASSWORDS SETUP
- OPTIONS: NOISE LEVEL

Medium setup allows full usage of the multi-layered security architecture.
FEATURES: PROGRAM ARCHITECTURE

STEP 2 – CHOOSE TEXT:

(I) 

(II) 

(I)	< TextEdit – blue window >	Enter/paste a text
	(*Original size before locking*)	Example: 144
	(*Font size*)	Text font size
	(*Lock!*)	Start locking

Choose the secret text you want to lock. Secret text will not be overwritten and locked text will be saved to the *Text Unlock* window, ready to be cut and pasted.

There's a maximum locked size constraint of 256 Kb that, depending on the noise level, will also add a maximum plain size constraint. Little files (up to 3 Kb) will let you free to choose any noise level. Medium and large files (up to 46 Kb) will force you to choose a lower compatible (by size) noise level.

EXAMPLE:

- Noise level: 900%
- Original size before locking: 144 bytes ≤ 18 Kb
- Size after locking: ((144 + 256) / 96) * 1280 = 6.400 bytes ≤ 256 Kb

Noise Level	Noise	Data	Min. Plain → Locked Size	Max. Plain → Locked Size
900%	864	**96**	1 B → 3840 B	**18 Kb → 256 Kb**

OPTIONS: NOISE LEVEL

BACK

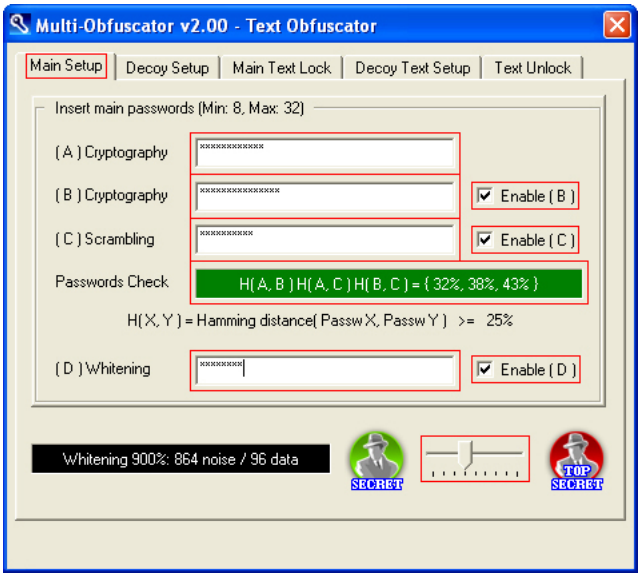
TEXT UNLOCK – MEDIUM SETUP (4 PASSWORDS)

BEGIN:

(*Text Lock/Unlock*)	Go to text (email format) panel

Select *Text Lock/Unlock*.

STEP 1 – CHOOSE PASSWORDS:



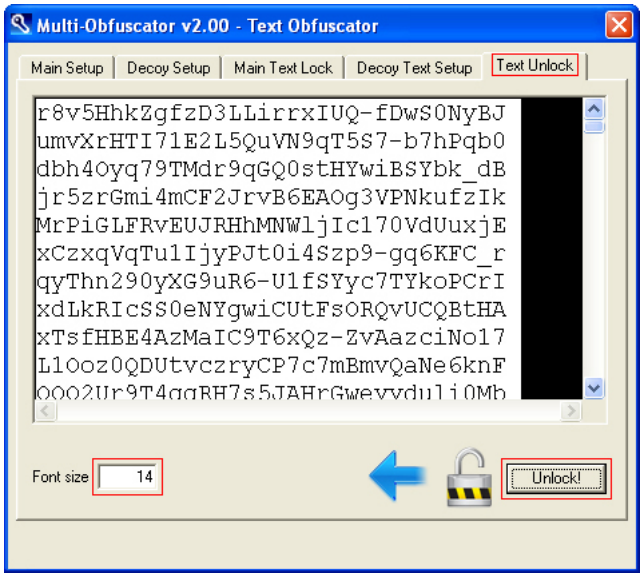
(*Cryptography A*)	First password
(*Cryptography B*)	Second password (cryptography CSPRNG)
(*Scrambling C*)	Third password (scrambling CSPRNG)
(*Whitening D*)	Forth password (whitening CSPRNG)
(*Enable B*)	Second password enable/disable
(*Enable C*)	Third password enable/disable
(*Enable D*)	Forth password enable/disable

Set same set of passwords and noise level as locking time. Full password and noise details are available in special separate sections:

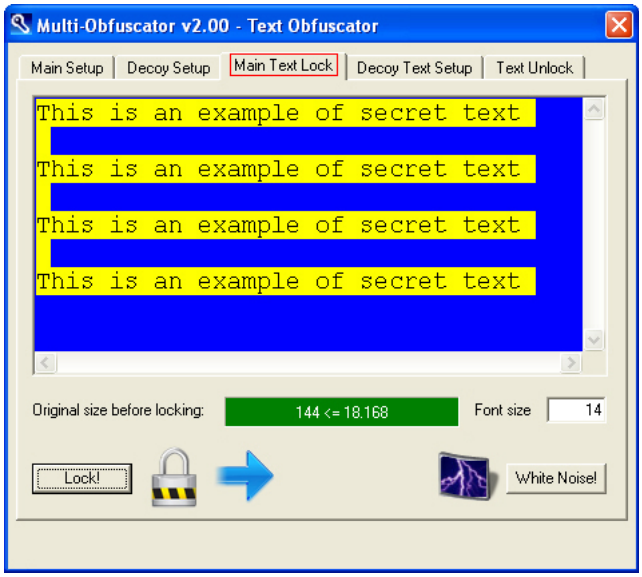
- MEDIUM PASSWORDS SETUP
- OPTIONS: NOISE LEVEL

STEP 2 – CHOOSE TEXT:

(I)

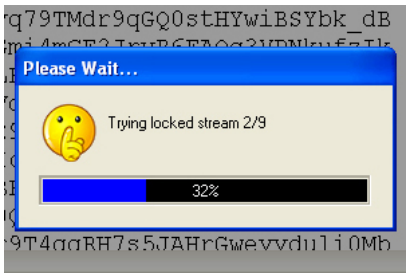


(II)



(I)	< TextEdit – black window >	Enter/paste a locked text
	(*Font size*)	Text font size
	(*Unlock!*)	Start unlocking

Choose the locked text you want to unlock. Locked text will not be overwritten and unlocked secret text will be saved to the *Main Text Lock* window, ready to be cut and pasted.



Aspect number: (960 / Data) – 1
-1 because of χ^2-self-adjustment

Noise Level	Noise	Data	Aspects
300%	720	**240**	4 - 1
400%	768	**192**	5 - 1
500%	800	**160**	6 - 1
900%	864	**96**	10 - 1
1100%	880	**80**	12 - 1
1400%	896	**64**	15 - 1
1900%	912	**48**	20 - 1
2900%	928	**32**	30 - 1
5900%	944	**16**	60 - 1

Unlocking, even when passwords and locked text are ok, may take a long time due to the aspect number. The higher the noise level is, the more the aspects are. MultiObfuscator, by design, doesn't know which aspect was selected at locking time and has to slowly guess it by trial and error.

FEATURES: PROGRAM ARCHITECTURE

BACK

EXPERT

TEXT LOCK – ADVANCED SETUP (4 PASSWORDS+DECOY)

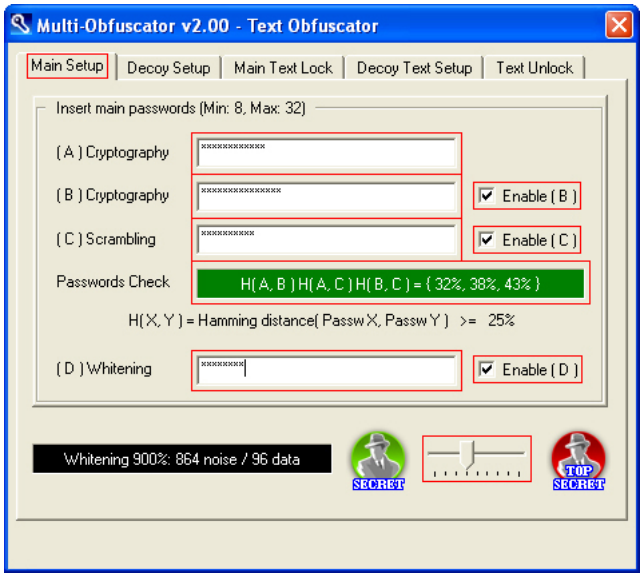
BEGIN:

(*Text Lock/Unlock*)	Go to text (email format) panel

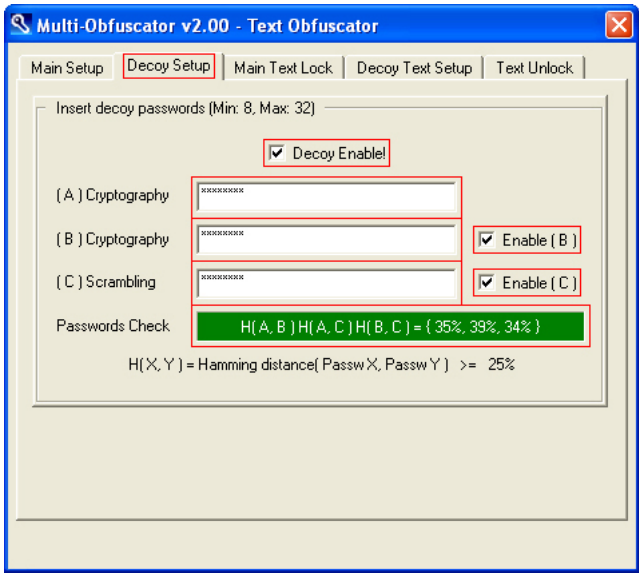
Select *Text Lock/Unlock*.

STEP 1 – CHOOSE PASSWORDS:

(I)



(II)

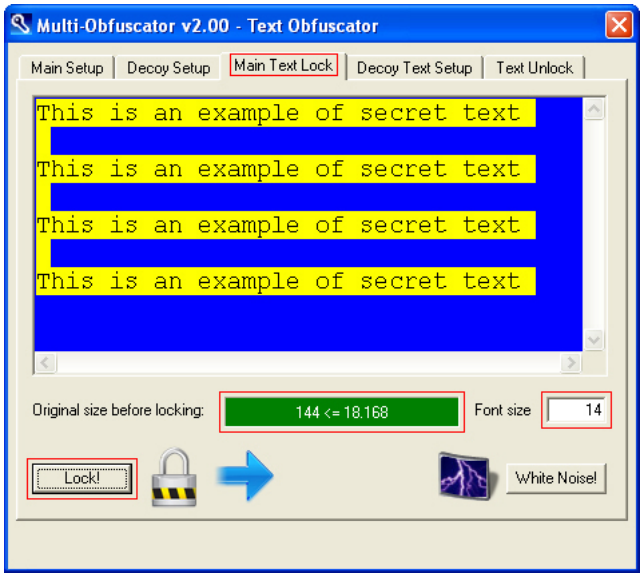


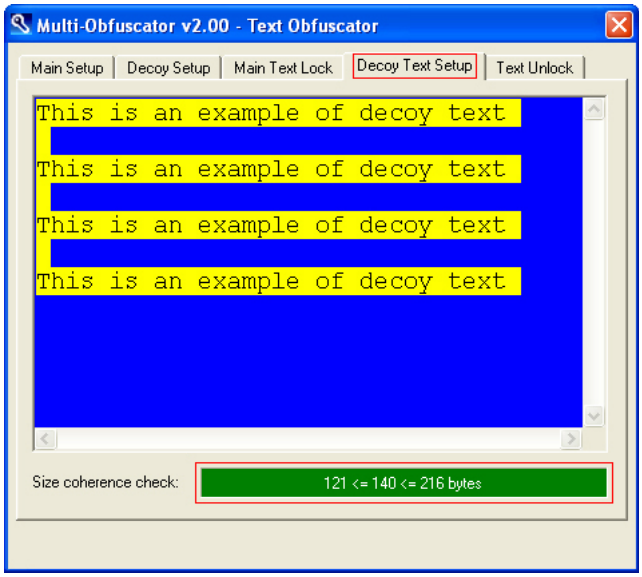
(I)	(*Cryptography A*)	First password
	(*Cryptography B*)	Second password (cryptography CSPRNG)
	(*Scrambling C*)	Third password (scrambling CSPRNG)
	(*Whitening D*)	Forth password (whitening CSPRNG)
	(*Enable B*)	Second password enable/disable
	(*Enable C*)	Third password enable/disable
	(*Enable D*)	Forth password enable/disable
(II)	(*Decoy Enable!*)	Decoy enable/disable
	(*Cryptography A*)	First decoy password
	(*Cryptography B*)	Second decoy password
	(*Scrambling C*)	Third decoy password
	(*Enable B*)	Second decoy password enable/disable
	(*Enable C*)	Third decoy password enable/disable

Insert a set of passwords, a set of decoy passwords and choose a noise level. Full password and noise details are available in special separate sections:

- ADVANCED PASSWORDS SETUP – LOCK
- OPTIONS: NOISE LEVEL
- FEATURES: PROGRAM ARCHITECTURE

STEP 2 – CHOOSE TEXT:

(I) 

(II) 

(I)	< TextEdit – blue window >	Enter/paste a text
	(*Original size before locking*)	Example: 144
	(*Font size*)	Text font size
	(*Lock!*)	Start locking
(II)	< TextEdit – blue window >	Enter/paste a decoy text
	(*Size coherence check*)	Example: 140

Choose the secret text and a compatible (by size) decoy text you want to lock.

EXAMPLE:

- Noise level: 900%
- Original size before locking: 144 bytes ≤ 18 Kb
- Size after locking: ((144 + 256) / 96) * 1280 = 6.400 bytes ≤ 256 Kb
- Decoy size: (((121 ≤ x ≤ 216) + 256) / 96) * 1280 = 6.400 bytes ≤ 256 Kb

Noise Level	Noise	Data	Min. Plain → Locked Size	Max. Plain → Locked Size
900%	864	**96**	1 B → 3840 B	**18 Kb → 256 Kb**

Be aware that:
- the higher the noise level is, the less the data bytes per block are
- the less the data bytes per block are, the narrower the decoy size range is

Minimum (300%) → Data = 240 → inf ≤ x ≤ sup → sup - inf = 240 bytes
Maximum (5900%) → Data = 16 → inf ≤ x ≤ sup → sup - inf = 16 bytes

Be sure to read also the intermediate section
TEXT LOCK – MEDIUM SETUP (4 PASSWORDS)

BACK

EXPERT

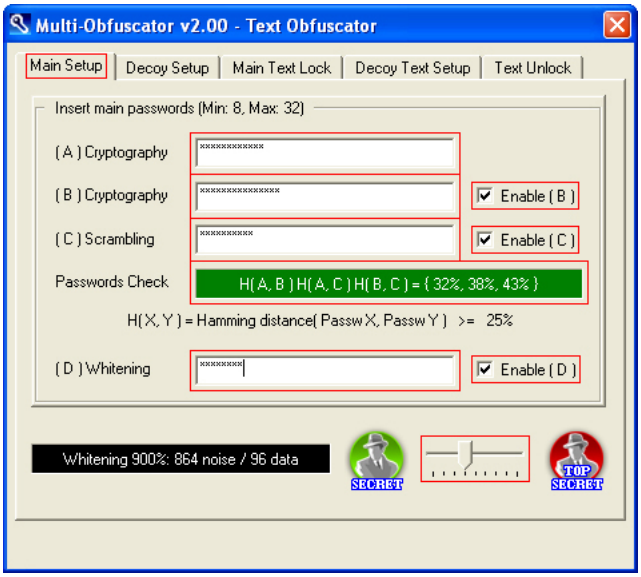
TEXT UNLOCK – ADVANCED SETUP (4 PASSWORDS+DECOY)

BEGIN:

(*Text Lock/Unlock*)	Go to text (email format) panel

Select *Text Lock/Unlock*.

STEP 1 – CHOOSE PASSWORDS:



(*Cryptography A*)	First password
(*Cryptography B*)	Second password (cryptography CSPRNG)
(*Scrambling C*)	Third password (scrambling CSPRNG)
(*Whitening D*)	Forth password (whitening CSPRNG)
(*Enable B*)	Second password enable/disable
(*Enable C*)	Third password enable/disable
(*Enable D*)	Forth password enable/disable

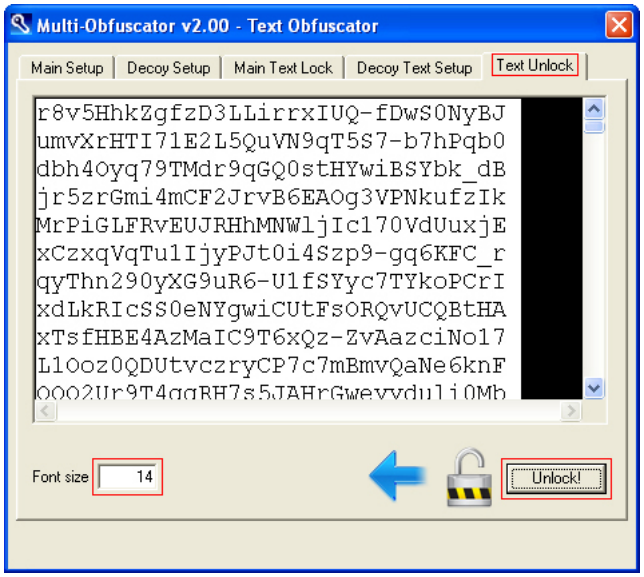
Set same set of passwords (secret to get secret data, decoy to get decoy data) and noise level as locking time. Full password and noise details are available in special separate sections:

- ADVANCED PASSWORDS SETUP – UNLOCK
- OPTIONS: NOISE LEVEL

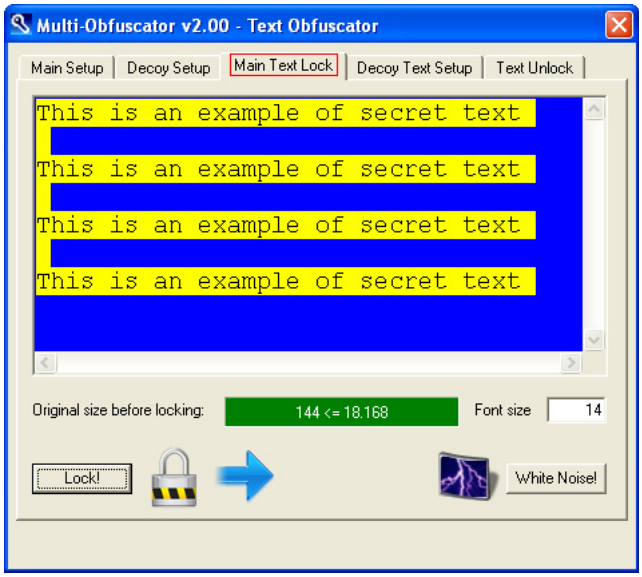
Detailed decoy details are available here:
WHAT IS DENIABLE CRYPTOGRAPHY?

STEP 2 – CHOOSE TEXT:

(I)

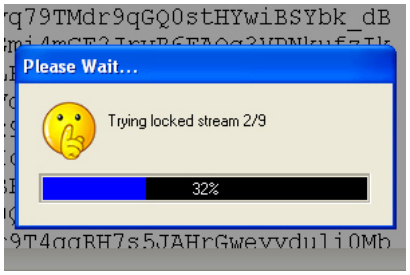


(II)



(I) < TextEdit – black window >	Enter/paste a locked text
(*Font size*)	Text font size
(*Unlock!*)	Start unlocking

Choose the locked text you want to unlock. Locked text will not be overwritten and unlocked text (secret or decoy, depending on the set of passwords) will be saved to the *Main Text Lock* window, ready to be cut and pasted.



Aspect number: (960 / Data) – 1
-1 because of χ^2-self-adjustment

Noise Level	Noise	Data	Aspects
300%	720	**240**	4 - 1
400%	768	**192**	5 - 1
500%	800	**160**	6 - 1
900%	864	**96**	10 - 1
1100%	880	**80**	12 - 1
1400%	896	**64**	15 - 1
1900%	912	**48**	20 - 1
2900%	928	**32**	30 - 1
5900%	944	**16**	60 - 1

Unlocking, even when passwords and locked text are ok, may take a long time due to the aspect number. The higher the noise level is, the more the aspects are. MultiObfuscator, by design, doesn't know which aspect was selected at locking time and has to slowly guess it by trial and error.

FEATURES: PROGRAM ARCHITECTURE

BACK

EXPERT	

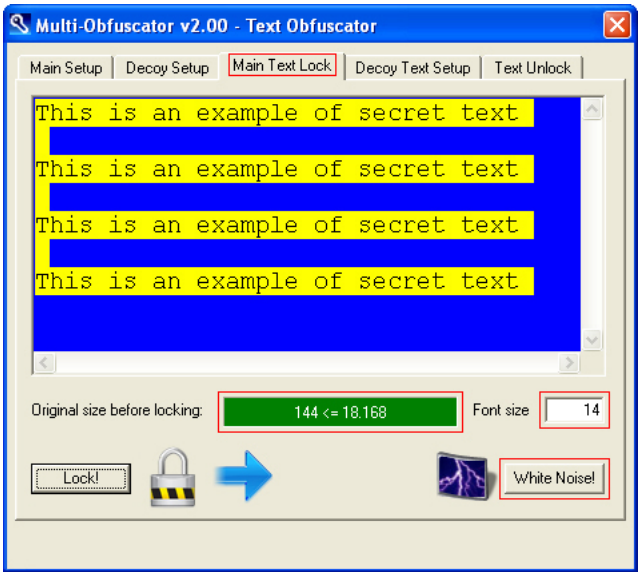
WHITE NOISE AS A DECOY (TEXT)

BEGIN:

(*Text Lock/Unlock*)	Go to text (email format) panel

Select *Text Lock/Unlock*.

STEP 1 – CHOOSE TEXT:



< TextEdit – blue window >	Enter/paste a text
(*Original size before locking*)	Example: 144 bytes
(*Font size*)	Text font size
(*White Noise!*)	Start randomizing

Locked text is statistically undistinguishable from void randomized text. Advanced users will be able to add void/fake texts to the sentive ones, in order to waste attackers' time. This task will save white noise only to a fake container compatible (by size) with the selected text.

FEATURES: PROGRAM ARCHITECTURE

EXAMPLE:

- Noise level: 900%
- Size after locking: ((144 + 256) / 96) * 1280 = **6.400** bytes ≤ 256 Kb
- White noise size: **6.400** bytes

Noise Level	Noise	Data	Min. Plain → Locked Size	Max. Plain → Locked Size
900%	864	**96**	1 B → 3840 B	18 Kb → 256 Kb

OPTIONS: NOISE LEVEL

BACK