GPG

The government is watching you...

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What is cryptography?

Cryptography, n.

The science which studies methods for encoding messages so that they can be read only by a person who knows the secret information required for decoding, called the key



Caesar cipher

Caesar cipherROT13

- Caesar cipher
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- Symmetric cipher

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 - Blowfish

Problems with Symmetric Ciphers

"Pre-shared secret"

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• 2 keys!

• • • • •

2 keys!Public

2 keys!
Public
Private



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Encrypt/Decrypt

- Encrypt/Decrypt
 - Encrypt with public key

- Encrypt/Decrypt
 - Encrypt with public key
 - Decrypt with private key

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Sign/Verify signature

- Sign/Verify signature
 - Sign with private key

- Sign/Verify signature
 - Sign with private key
 - Verify with public key



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What? — GPG

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- What? GPG
- Why?

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- What? GPG
- Why?
 - Encrypt/decrypt documents

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- What? GPG
- Why?
 - Encrypt/decrypt documents

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- Sign/verify documents
- How?

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Generate a key

- Generate a key
- Sign a file

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- Verify the signature on a file

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- Encrypt a file

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- Decrypt a file

- Generate a key
- Sign a file
- Verify the signature on a file
- Encrypt a file
- Decrypt a file
- Nasty, eh?

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Generate key pair

- Generate key pair
- Send the *public* key to me

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- Send the *public* key to me
- I will compile a list of keys

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- I will put it on the web

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 - If it is NOT, let me know ASAP

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- Send the *public* key to me
- I will compile a list of keys
- I will put it on the web
- You will verify that your key is correct
 If it is NOT, let me know ASAP
- Print a copy & bring it next month

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We'll go though each key

We'll go though each keyThe owner will read it

- We'll go though each key
 - The owner will read it
 - The owner will present sufficient ID

- We'll go though each key
 - The owner will read it
 - The owner will present sufficient ID
 - Rest will verify

After Next Meeting

 Go home, and for each key which was verified by YOU

 Go home, and for each key which was verified by YOU

Sign it

- Go home, and for each key which was verified by YOU
 - Sign it
- Send me the signed public keys

- Go home, and for each key which was verified by YOU
 - Sign it
- Send me the signed public keys
- I'll combine them, and create a LiLUG keyring that everyone can import

References

- Images shamelessly stolen from Wikipedia.
- Wikipedia Asymmetric key algorithm
- GNU Privacy Guard http://www.gnupg.org
- OpenPGP Message Format http://www.ietf.org/rfc/rfc2440.txt



Questions?

Remember: Just because I'm paranoid doesn't mean they aren't out to get me.

Caesar Cipher

To encrypt: e = (c + 3) mod 26
To decrypt: c = (e - 3) mod 26

ROT13

To encrypt: e = (c + 13) mod 26

To decrypt: c = (e - 13) mod 26 = (e + 13) mod 26