GnuPG: Past, Present, and Future

Werner Koch

DebConf15 — Heidelberg
August 16, 2015

GnuPG

Outline

PGP-2 and the year was 1991

- First public available crypto tool by Phil Zimmermann.
- Heavily improved by Branko Lankester, Colin Plumb, Derek Atkins, Hal Finney, Peter Gutmann, et al.
- Problem 1: RSA patent
- Problem 2: IDEA patent
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PGP-5 and OpenPGP

- 1996: PGP Inc founded
- Spring 1997: DH patent expired, PGP-5 released
- Autumn 1997: OpenPGP WG chartered
- Spring 1998: PGP Inc bought by NAI (ceased support in 2002)
- Autumn 1998: RFC-2440 published
- Autumn 2007: RFC-4880 published

IN Kongreß 1997

Start

Zurück

Vorträge des Kongreß 97

des Individual Network e.V.

27. und 28. September 1997

Samstag, 27. September 1997		
Zeit	Security	New Technologies
9:00-9:30	Heiko Schlichting Keynote	
9:30-10:30	Norbert Pohlmann Firewall-Technologien	Werner Almesberger ATM und Linux
10:30-11:30	T. Zieschang Security und Chipcards	Dave S. Miller Linux on Sparc
11:30-12:30	M. Klische, DCS AG Biometrische Personenidentifikation	Stephen R. van den Berg SPAM, procmail, cucipop
12:30-13:30	Mittagessen	
13:30-14:30	Andreas Bäß Status DPN	Bruce Perens, Pixar Inc. Debian GNU/Linux
14:30-15:30	Arttu Huhtiniemi, SolidTech Database and JAVA	Xlink
15:30-16:00	Pause	
16:00-17:00	Gerhard Unger Secure Computing	Bettina Kauth, DFN-NOC Status des B-WiN
17:00-18:00	Richard Stallman GNU Current Projects, Ethico-Political issues of free software	
20:00-offen	Buffet Geselliger Abend	
Sonntag, 28. September 1997		
Zeit	Security	New Technologies
9:30-10:30	Jörg Ladwein Security Dynamics	Jan Vekemans, Vasco Internet-AcessKey
10:30-11:30	Lutz Donnerhacke CA+PGP-Keys	
11:30-13:00	Brunch	
13:00-14:00	Thomas Hetschold, GMD Secude	K. Schröter, DOCconnect AG DOCconnect, Med. Network
14:00-15:00	Alan Cox IPv6	Progressive Networks Live Video
15:00-16:00	D. James Bidzos Präsident der RSA Inc.	

GnuPG

g10 / GnuPG

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  - even PGP-2 not DFSG compatible
- December 1997: g10 as free PGP-2 replacement
  - No patented algorithms
  - Designed as Unix tool
- Spring 1998: Name now GnuPG, protocol now OpenPGP.

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  - Blowfish as symmetric cipher
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- OpenPGP introduced subkeys
  - DSA for signatures, Elgamal for encryption.
  - 3DES and CAST5 for symmetric cipher.
  - RSA added in September 2000
- GnuPG and PGP-{5,6,7}
  - Worked with Hal Finney and Jon Callas
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  - Released November 2014
  - Fixing remaining bugs
  - Adding last features
  - In experimental
- Version 2.0 ("stable")
  - Just maintained.
  - Minor changes to help migration to 2.1.
- Version 1.4 ("classic")
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  - Keeping PGP-2 support.
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Jun 2015 WG re-chartered

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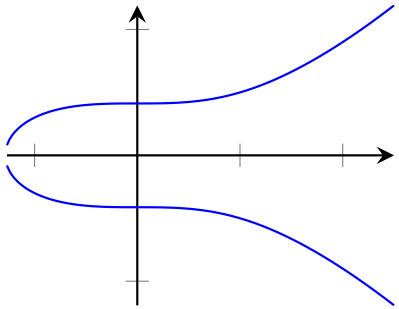
RFC-4880bis goals

- Potential inclusion of curves recommended by the Crypto Forum Research Group (CFRG)
- A symmetric encryption mechanism that offers modern message integrity protection (AEAD)
- Revision of mandatory-to-implement algorithms and deprecation of weak algorithms
- An updated public-key fingerprint mechanism

Elliptic curve cryptography



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  - ECDH with Curve25519,
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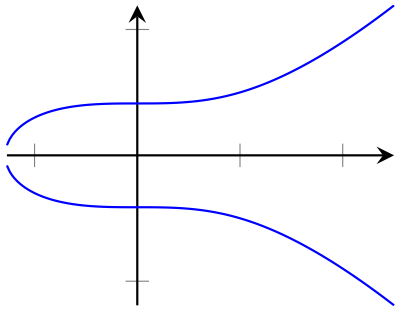

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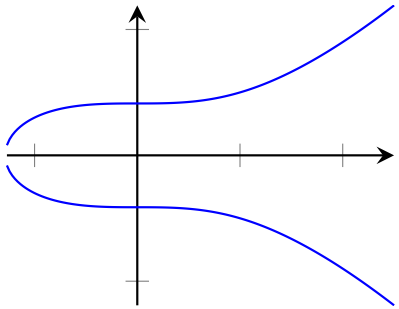

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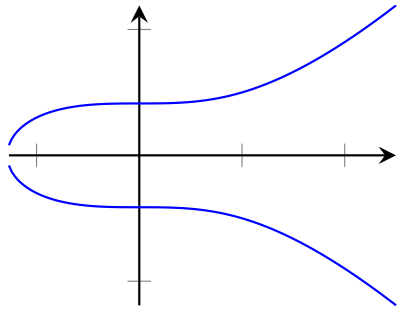

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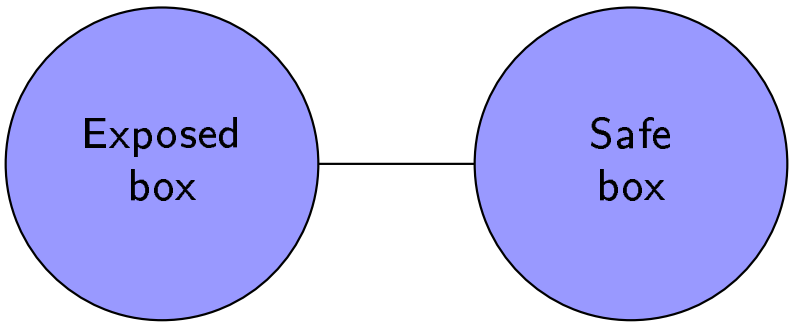

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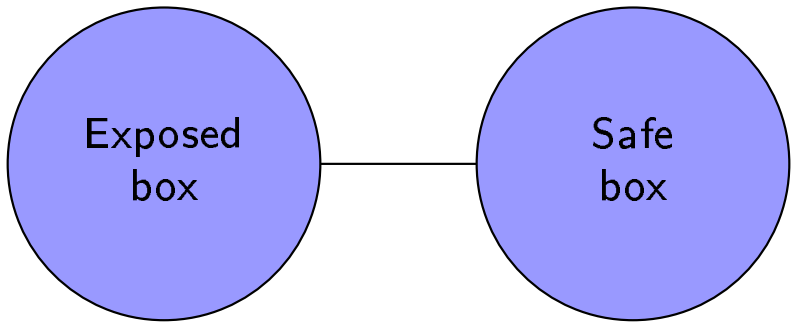

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- ProPublica article in February . . .
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Special thanks

- David Shaw
- Marcus Brinkmann
- Jussi Kivilinna
- Andre Heinecke
- Debian folks:
  - Andreas Metzler
  - Daniel Kahn Gilmor
  - Daniel Leidert
  - Eric Dorland
  - James Troup
  - Matthias Urlichs
  - Thijs Kinkhorst
- Bug reporters, reviewers, testers, donors, ...

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- Gpg and Web-of-Trust are too hard
  - Keysigning parties are for geeks
- New default focus:
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  - Easy to use
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Planned features:

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