zdc

Zdc

Pharo Conference May 2012

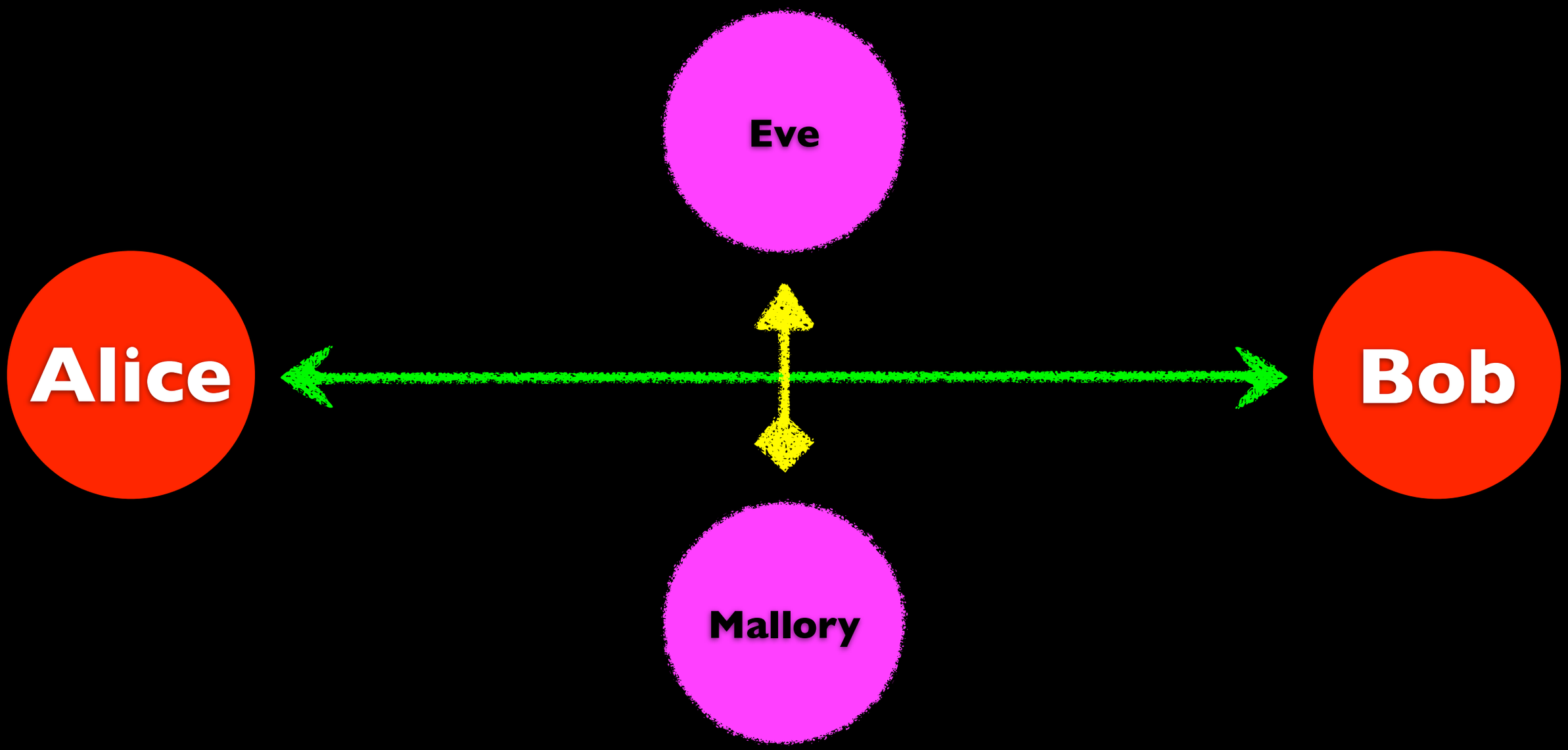
Sven Van Caekenberghe

Smalltalk is the Red Pill

Zodiac

TLS/SSL

Streams


Eve
Alice
Bob
Mallory

Problems

- Eavesdropping
  - listing in
- Tampering
  - changing communication
- Posing
  - acting on behalf of

TLS/SSL

- Transport Layer Security
- Secure Socket Layer
- Mostly Transparent

TLS/SSL

- Setup Handshake
- Setup Session
- Communicate

Setup Handshake

- Exchange parameters

- Negociate versions, algorithms

Setup Session

- Use asymmetric public/private cryptography to exchange random session key

- Verify certificates using chain of trust

Communicate

- Use symmetric encryption on padded message blocks

- Use message authentication codes

Hard !

Fall back to OS Library

SocketStream ?

Zodiac

Streams

Buffer Management

Zodiac Streams

- *ZdcAbstractSocketStream*
  - ZdcSimpleSocketStream
    - ZdcOptimizedSocketStream
      - ZdcSocketStream
- ZdcIOBuffer

OK !

ZdcSecureSocketStream

Plugin

Plugin

- *ZdcAbstractSSLSession*
  - ZdcPluginSSLSession

- VM Plugin
  - native OS library interface

ZdcSecureSocketStream

- readBuffer & writeBuffer [plain]
- in & out [encrypted]
- framing

ZdcSecureSocketStream

- #connect
- #accept
- certificates

Use

HTTPS Client

Secure POP

incl STARTTLS

Secure SMTP

HTTPS Server

http://zdc.stfx.eu

Zodiac TLS/SSL Streams

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