Open Security for public institutions

OpenSecurity
open source solution for public institutions

Technical APs Status Report

Wien, 12.12.2013

(by Oliver Maurhart, AIT)

Ausgangspunkt

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- Konsortialmeeting 24.09.2013 in Linz
  - Architekturpräsentation
    - Xen basierend
    - VirtualBox basierend
  - Uses Cases
    - Safe Internet Browsing
    - Virus Checking auf Removable Storage Devices
    - Automatsiche Ver- und Entschlüsselung „on the fly“

Ziel

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- Im Q1/XIV
  - Windows Host
    - VirtualBox
  - ALLE (!) Uses Cases
    - Safe Internet Browsing
    - Virus Checking auf Removable Storage Devices
    - Automatsiche Ver- und Entschlüsselung „on the fly“
  - Als Easy-to-use Installable
  - Eventuell download von www.opensecurity.at

Architektur

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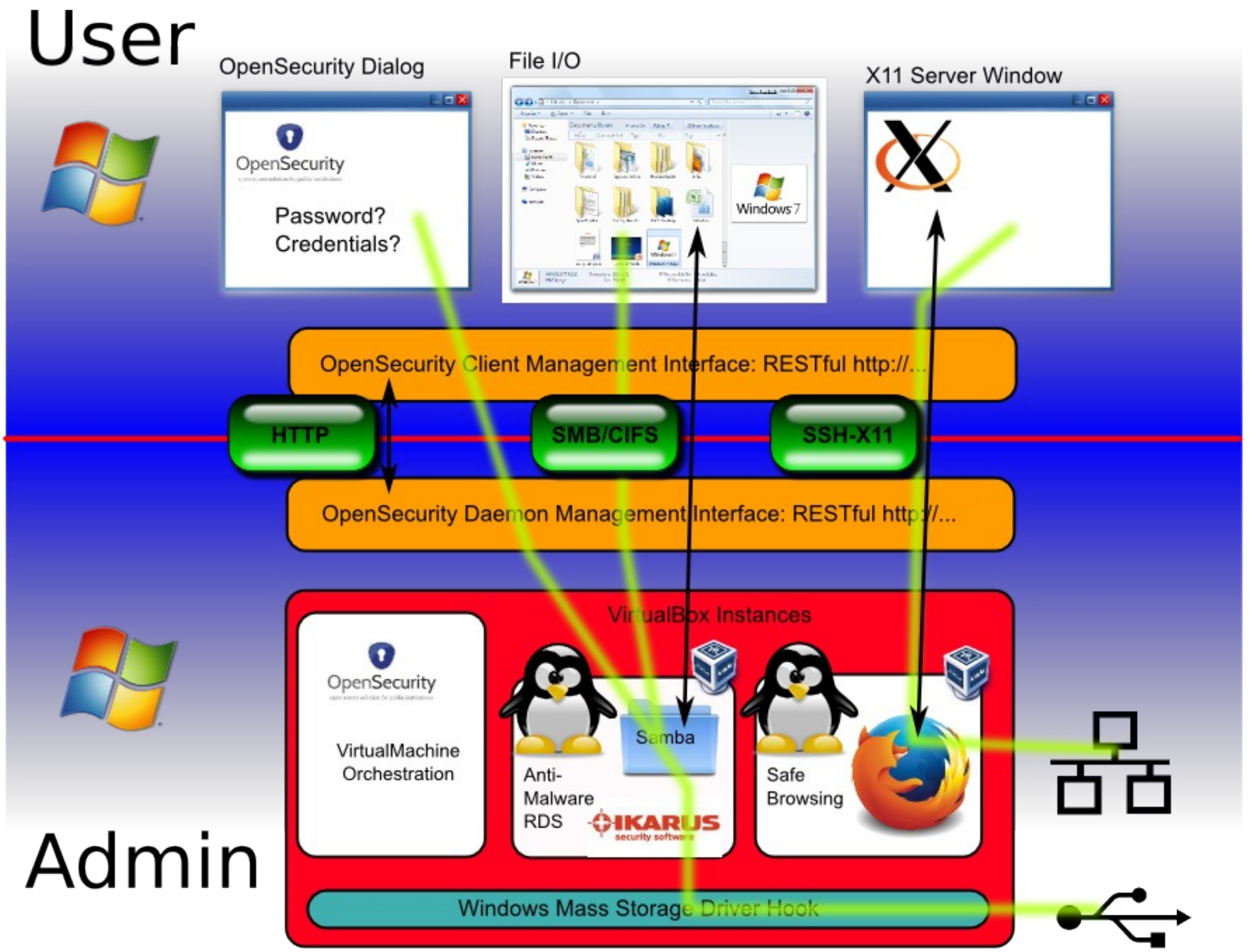
- Kernelemente:
  - Windows 7 64 Bit Referenzearchitektur
  - VirtualBox
  - SecurityVM
    - Immutable disposable VMs
  - USB Driver
  - Encryption
    - TrueCrypt
  - Virus Scanning local & remote with IKARUS


User
OpenSecurity Dialog
File I/O
X11 Server Window
OpenSecurity
Password?
Credentials?
Windows 7
OpenSecurity Client Management Interface: RESTful http://...
HTTP
SMB/CIFS
SSH-X11
OpenSecurity Daemon Management Interface: RESTful http://...
VirtualBox Instances
OpenSecurity
VirtualMachine
Orchestration
Samba
Anti-
Malware
RDS
IKARUS
security software
Safe
Browsing
Windows Mass Storage Driver Hook
Admin

Solution

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- Trennung in
  - OpenSecurity Admin
  - OpenSecurity Client
  - RESTful API als Schnittstelle
    - wohlbekannte Technologie
    - kein proprietäres Format
    - flexibel
  - Konsequenz:
    - Alle Elemente sind (theoretisch) austauschbar
    - Isoliert

Solution

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- OpenSecurity Admin
  - Orchestrierung von:
    - SecurityVMs
    - VirtualBox
      - Host-Only IP - Subnetz
      - NAT
    - USB Device Driver
    - Windows Service
    - Einhängen von „Netzlaufwerken“
      - „Downloads“ Verzeichnis
    - Bereitstellung Virtuelle Maschinen
      - X-Net Debian Repository

Solution

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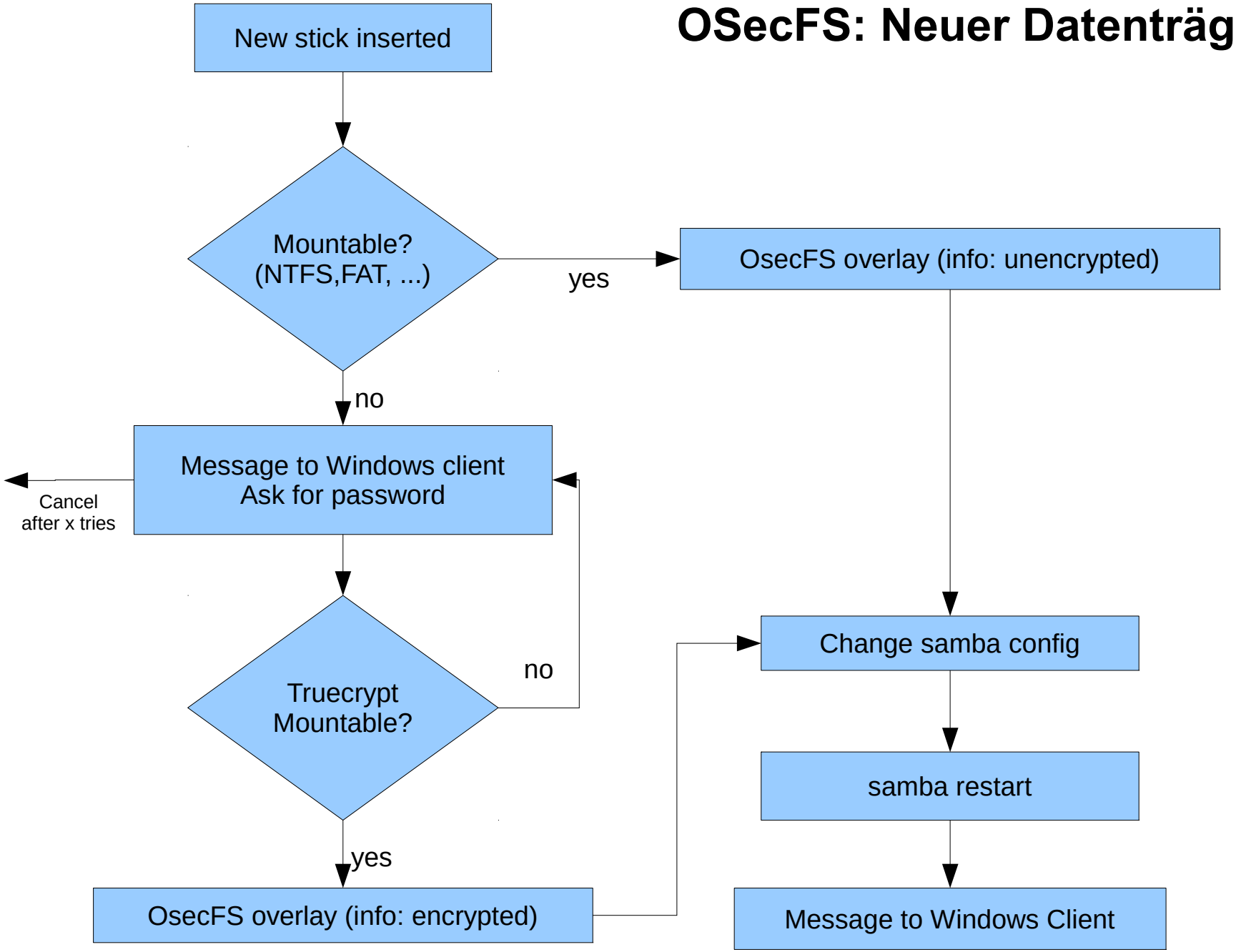
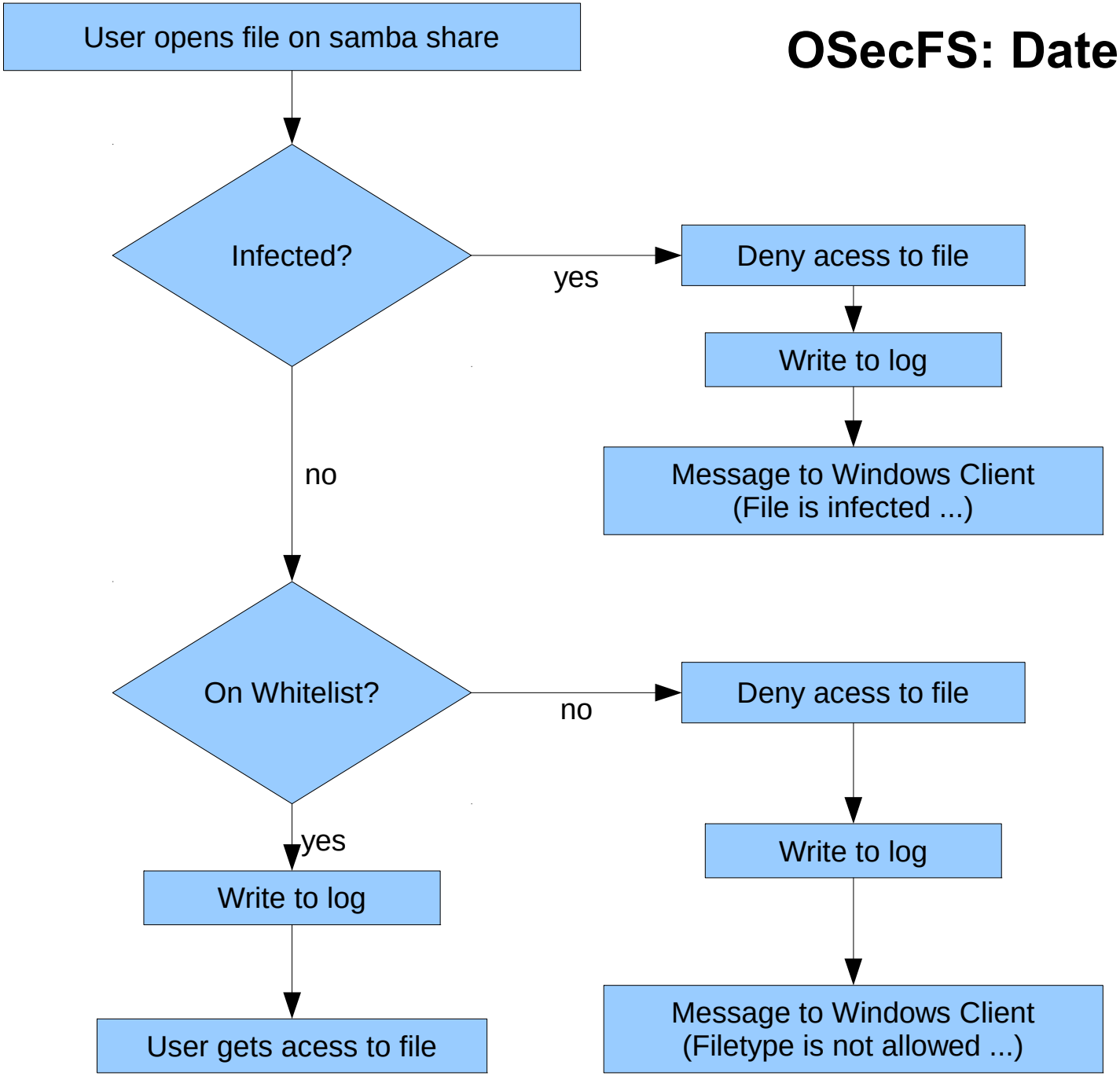
- OSecFS
  - Filesystem Overlay via FUSE
  - Administrieren von SMB/CIFS
  - Verschlüsseln/Entschlüsseln
  - Anstoßen von Virus Scan
- IKARUS AV
  - local / remote Virus Scanning
  - innerhalb der VM - Kommandline

OSecFS: Neuer Datenträger



OSecFS: Dateizugriff



Solution

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- OpenSecurity Client
  - X11 SSH Forwarding
  - System Tray Icon
  - Password & Credentials Dialog
    - OSecFS: http://192.168.56.1:8090/password?...
    - OS client: http://192.168.56.101:58080/password?...
  - Fehlermeldungen oder Warnung
    - „Virus XY in Datei ABC.exe identifiziert“

Aktuelle Situation

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Implementationsstand 12.12.2013?

Aktuelle Situation

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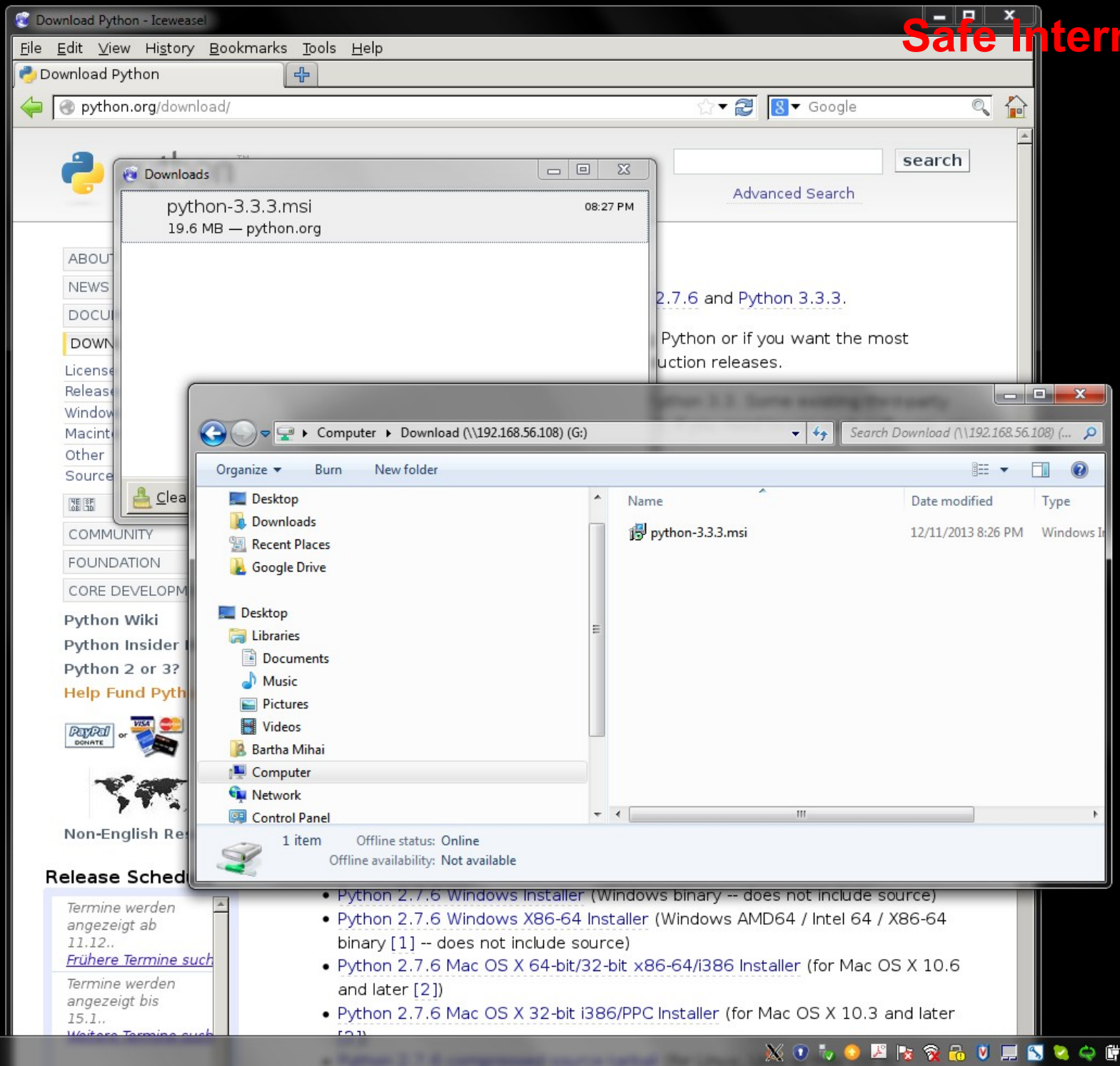
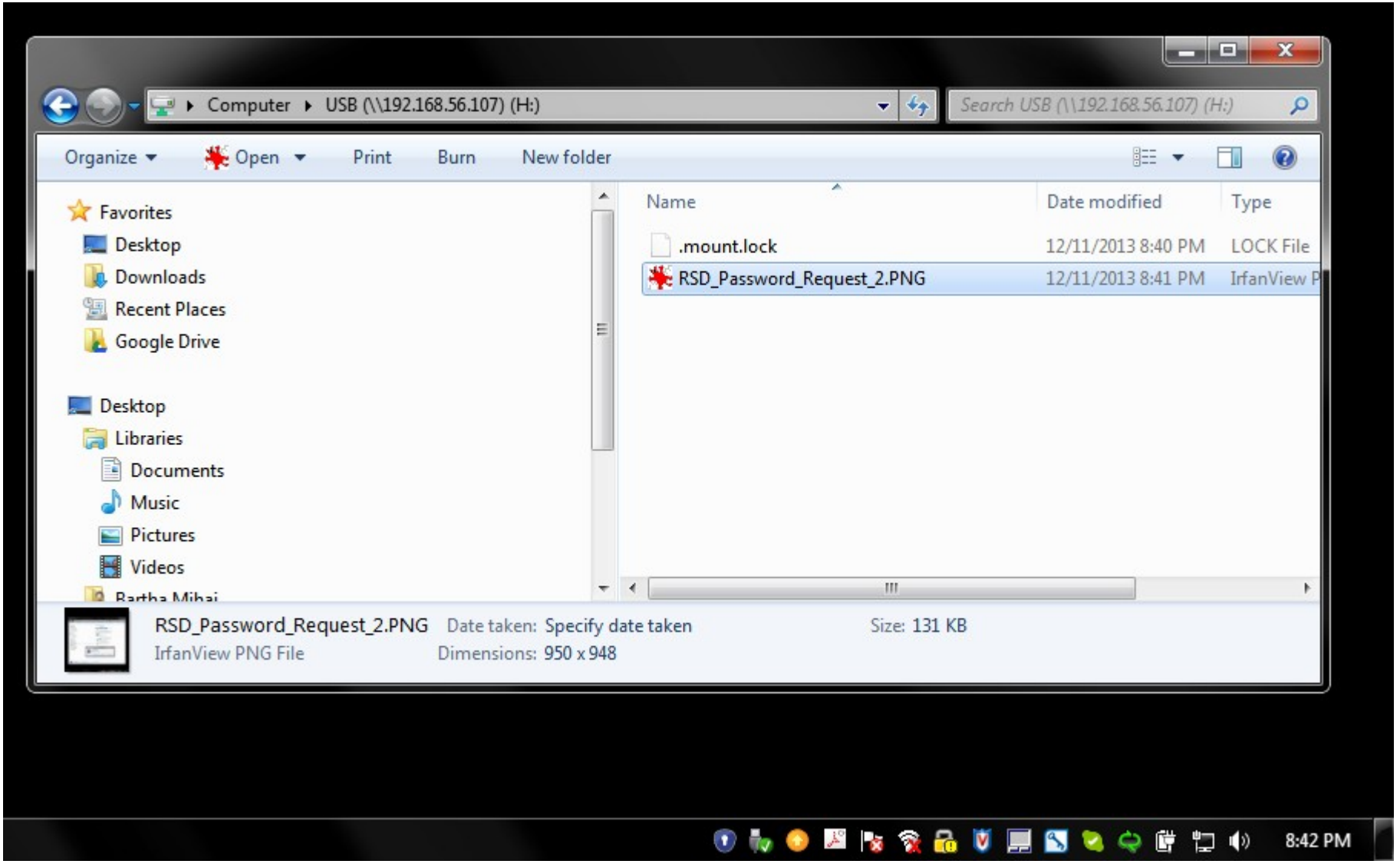
Feature complete!!

(hurray!)

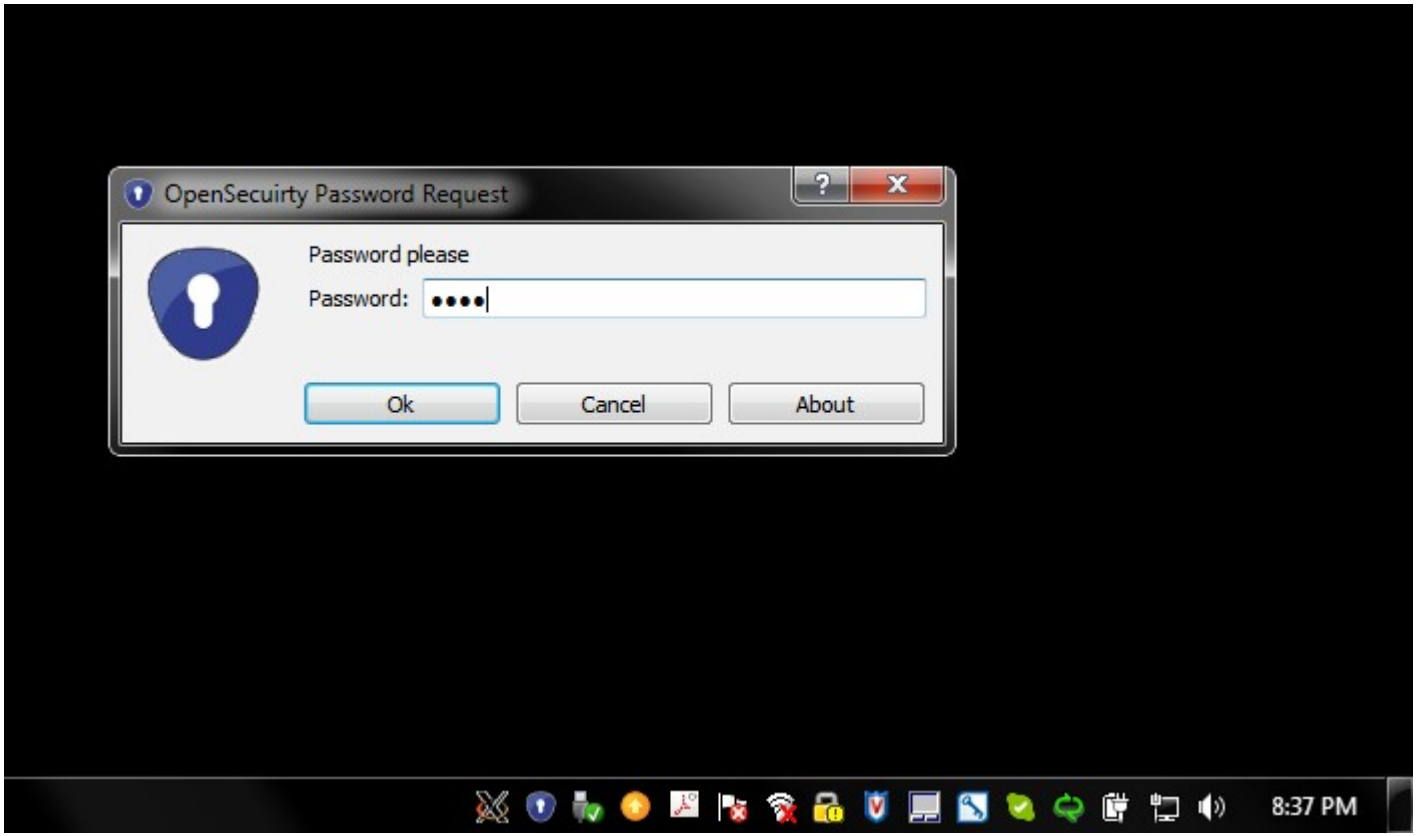
Safe Internet Browsing



USB Stick Zugriff



Entschlüsselng Password Abfrage + OpenSecurity SysTray



Aktuelle Situation

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Aber:

- ✓ Zur Zeit kein Deployment/Setup möglich
- ✓ Zahlreiche Hürden und Barrieren in der Systemintegration
  - Windows Firewall
  - Checkpoint
  - Windows User Rechte
  - Relocatables:
    - in welchem Pfad ist XY installiert?
    - welche Version?

Aktuelle Situation

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- Security Considerations
  - Was könnte wo im Applikationspfad passieren?
  - Wo sind Security Leaks
- Stabilitätsprobleme
  - Bsp. unerwartete Antworten von Subsystemen
- Bugs
  - In OpenSecurity Software
  - In 3rd Party Software

Next Steps

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- ✓ System Integration
- ✓ Stabilisierung
- ✓ Usability
  - bsp. wieviele parallele VMs „verträgt“ Win7?
- ✓ Testing
- ✓ Performance
- ✓ (Polish)

Ende

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Danke!

(Next: Demo)