

# Password Manager Evaluation Results

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# What is a password manager?

- A standalone application used exclusively to manage (mostly) your website passwords
- Examples of other desired features:
  - Intuitive user interface
  - Password generator (strength indicator)
  - Ability to store other data securely (identities, memberships, airline frequent flier, etc.)
- Applications' password keychain file SHOULD be protected with strong encryption

## Team's charge:

- Evaluate applications used for managing various user and account passwords.
- Consider product availability for the University's supported operating systems, general use scenarios, best practices, and security implications
- *Not* tasked with recommending specific products as *Penn Supported Products*

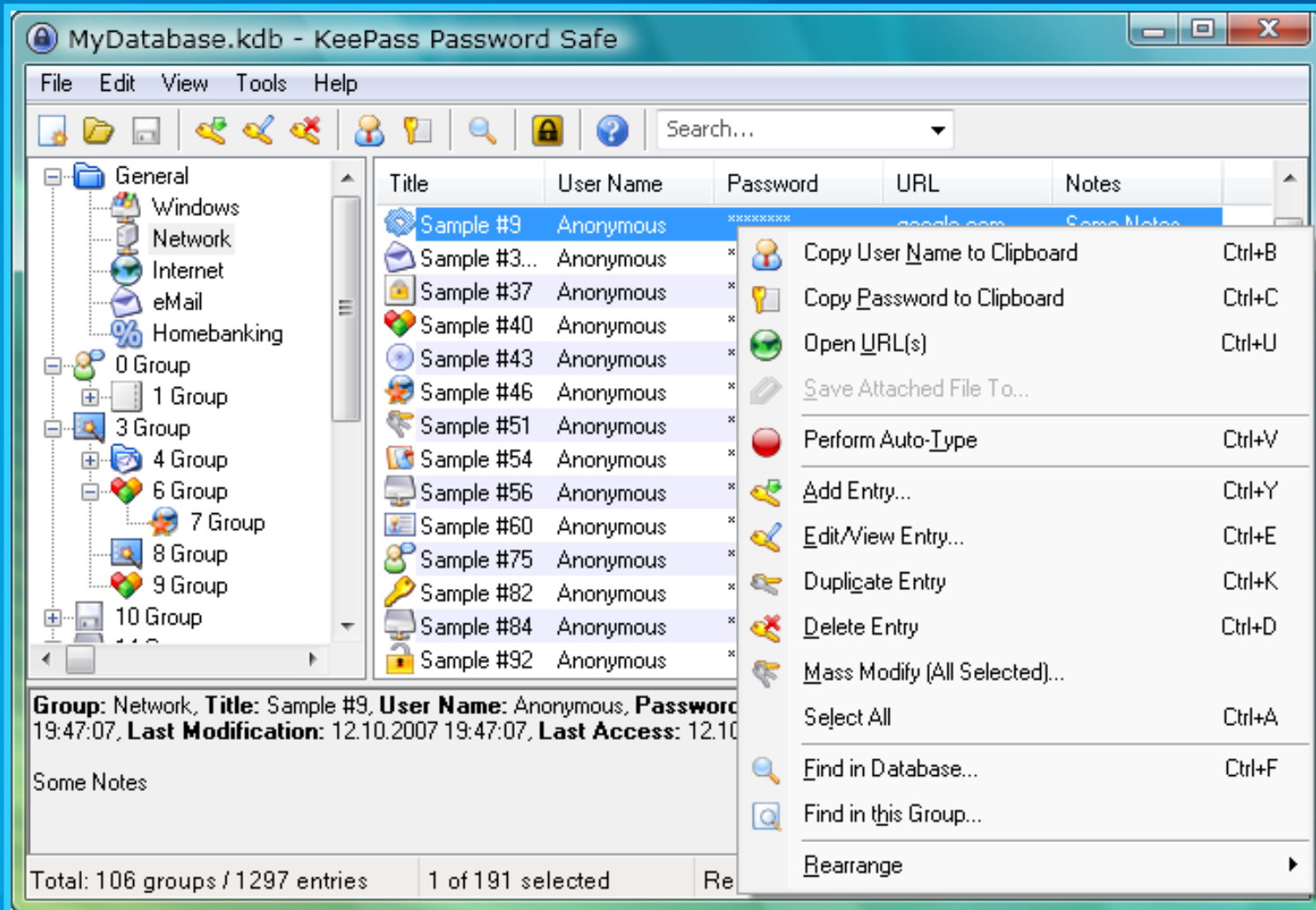
# Testing methodology

- Initial product list suggested to Team; expanded by Team members' experiences
- Created testing script ([demo](#))
- Due to time/resources, created shortlist
- Reported results, captured best practices

# Products of interest: Windows

- KeyPass Password Safe
  - Great for the everyday Windows user
  - Has ports for other operating systems (PocketPC, smartphones, Linux, Mac OS, etc.)
  - Free
  - <http://keepass.info/>

# KeyPass Password Safe



# Products of interest: Mac OS

- Keychain Access
  - Adequate for the everyday Mac OS user
  - Built-in to Mac OS (“free”)

# Keychain Access



Keychain Access

Click to lock the 1Password keychain.

Keychains

- login
- 1Password
- System
- System Roots

Category

- All Items
- Passwords
- Certificates
- My Certificates
- Keys
- Secure Notes

**Apple**  
Kind: 1Password Item  
Account: A09B8BE1EBA541FA8704E8AA6D4EDAA0  
Where: webforms.WebForm:apple.com  
Modified: Jan 25, 2008 8:30:58 PM

Name	Kind	Date Modified	Expires	Keychain
AIM	1Password Item	Jan 25, 2008 ...	--	1Password
AirPort Extreme	1Password Item	May 4, 2008 ...	--	1Password
Amadeus Pro 1	1Password Item	Apr 10, 2008...	--	1Password
Amazon	1Password Item	Jan 25, 2008 ...	--	1Password
Aperion Audio	1Password Item	Apr 27, 2008...	--	1Password
App Licenses	1Password Item	Jan 25, 2008 ...	--	1Password
Apple	1Password Item	Jan 25, 2008 ...	--	1Password
AppleInsider Forums	1Password Item	Apr 27, 2008...	--	1Password
AppZapper 1	1Password Item	Apr 10, 2008...	--	1Password

376 items

## Products of interest: Mac OS (cont'd)

- 1Password
  - Great alternative for Mac OS/iPhone users
  - Integrates cleanly with the iPhone version of 1Password
  - US\$39.95 (per user, unlimited computers)
  - <http://agilewebsolutions.com/products/1Password>

# 1Password

The screenshot shows the 1Password application window. The top toolbar includes icons for Lock, Wallet Item, Secure Note, Identity, Password, iPhone, and Palm. A search bar is located in the top right corner. The main area is divided into a sidebar on the left and a main content area on the right. The sidebar contains a 'Folders' section with various categories like All, Unassigned, Trash, App Licenses, Clients, Finances & Bills, Forums, Freelance, Shopping, and Social. The main content area displays a list of items with columns for Title, Type, and Modified. The selected item is 'VISA - Business Purchases', which is a Credit Card. Below the list, the details for this card are shown, including the cardholder's name, card type, number, verification number, expiration date, and valid from date. A note is also visible at the bottom of the details view.

Title	Type	Modified
QuickTime Pro 7	Software License	Apr 10, 2008 3:50 AM
Snapz Pro X 2	Software License	Apr 10, 2008 3:36 AM
Speed Download 5	Software License	Apr 10, 2008 3:49 AM
SRS iWow 1	Software License	Apr 10, 2008 3:24 AM
SteerMouse 3	Software License	Apr 10, 2008 3:48 AM
SuperDuper 2	Software License	Apr 10, 2008 3:34 AM
TaskPaper 1	Software License	Apr 10, 2008 3:43 AM
TechTool 4	Software License	Apr 10, 2008 3:23 AM
TextExpander 2	Software License	Feb 9, 2008 8:45 PM
Tiki Magic Mini Golf	Software License	Apr 10, 2008 3:37 AM
VISA - Business Purchases	Credit Card	May 6, 2008 4:32 AM
WriteRoom 2	Software License	Apr 10, 2008 3:52 AM

**VISA - Business Purchases** Edit

Cardholder's Name: **Jeve Stobs**  
Card Type: **visa**  
Number: **1234567890123456**  
Verification Number: **123**  
Expiration Date: **5 / 2018**  
Valid From: **2 / 2008**

Notes: **Pay this one off quick! Outrageous 28.8% interest rate will bankrupt you quickly.**

Created: May 6, 2008 4:32 AM Last modified on: May 6, 2008 4:32 AM

42 items displayed, 376 items overall, arranged by section

# Best practices

- Lock password manager/screensaver if walking away from workstation
- Don't write down passwords
- If you keep passwords in a text file, encrypt! (Password manager keychains are encrypted)
- Change passwords occasionally
- Use common sense!

# Summary

<b>Operating system</b>	<b>Product</b>
Windows	KeePass Password Safe
Mac OS	Keychain Access
Mac OS (alternate)	1Password
Windows (enterprise)	Citrix Password Mgr.
Smartphones	KeePass ports

# Resources

- Team page
  - <http://www.upenn.edu/computing/eval/2008/passwordmanager/>
- Team Wiki
  - [http://prowiki.isc.upenn.edu/wiki/Password Manager Evaluation](http://prowiki.isc.upenn.edu/wiki/Password_Manager_Evaluation)
- Final report
  - <http://www.upenn.edu/computing/eval/2008/passwordmanager/finalreport.html>

Questions?

# Credits: Password Mgr. Eval. Team

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- Caroline Couture
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- John Lupton
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