

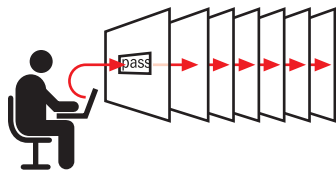
Serious Online Security

How **smart cards** provide solutions to software-based security problems

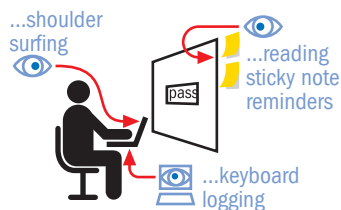
PROBLEMS WITH SOFTWARE-BASED SECURITY APPLICATIONS

Single sign-on, password vaults and other software-based security applications consolidate multiple passwords, but leave them vulnerable.

- 1 If passwords are the only protection used, then anyone obtaining the password can gain access to the system.

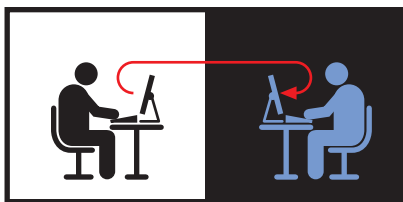


- 2 A master password is vulnerable to...



And a master password is static: once stolen, it can be used anytime.

- 3 Insiders and IT contractors can compromise master password files.

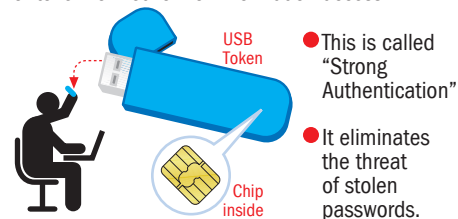


SOLUTIONS PROVIDED BY SMART CARDS



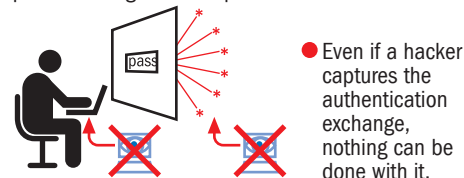
A smart card is a small computer that is separate from the desktop, and is used as part of the authentication process.

- 1 You must physically have the smart card or token for network or information access.



- This is called “Strong Authentication”
- It eliminates the threat of stolen passwords.

- 2 A smart card is invulnerable to keyboard logging because security key calculations are done by the computer inside it; only encrypted information passes through the computer.



- Even if a hacker captures the authentication exchange, nothing can be done with it.

- 3 Since insiders cannot log in without the token, and there is no master password, smart cards are virtually impossible to attack. Smart card technology is already at the heart of security systems for billions of dollars of individual transactions worldwide in mobilecom, banking, cable and satellite TV, and the U.S. Department of Defense.



HOW IS A SMART CARD SECURE?

- It's like a safe—separate from your computer—and you can put your network identity into it.
- By calculating keys and sign-ons, it's **active** in the security area. (ATM cards and drivers' licenses are passive.)
- It has hundreds of security features, such as internal randomization of data paths, and it cannot be scanned by an electron microscope.
- The communication channels in and out of the smart card are protected, as are the computations done inside it.

Source: Gemalto