SECURITY FUNDAMENTALS

Outline

- IT Security
- Physical Security
  - Locks
  - Tailgating
  - Documents
  - Biometrics
  - Badges
  - Key FOB/RFID Badge
  - RSA Token
  - Privacy Filter

Outline

- Digital Security
- User Education
- Principal of Least Privilege
- Security Threats
  - Social Engineering
  - Maleware
  - Best Security Practices
  - Data Destruction/Disposal
  - Physical Destruction
- Secure a SOHO Wifi Network

- The practice of defending information from unauthorized access, use, disclosure, disruption, modification, perusal, inspection, recording or destruction. It is a general term that can be used regardless of the form the data may take (electronic, physical, etc...)

Physical Security - Locks

- Bolt lock & key
- Combination/cypher, keypad, dial system
- ID access card with electronic chip or sensor
- Biometric – fingerprint, retinal
- Hardware locks – laptops, hard drive, portable devices

Physical Security - Tailgating

- Allowing an individual(s) access to a secure area by entering just behind a person who gained authorized access
- Risk reduced by strong policies (termination) for individuals who violate policy

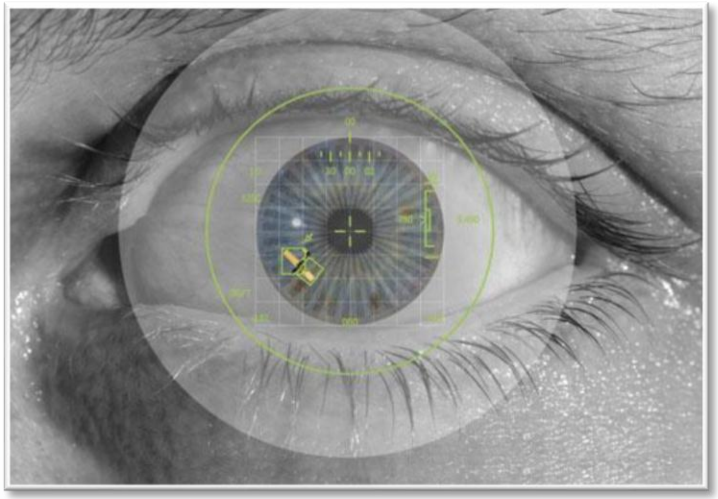
NO
TAILGATING
Each person must present his/her Apple I.D. Badge to the card reader to confirm valid access.

Physical Security - Documents

- Store confidential and secure documents in a secured area
- Destroy by
  - Shredding
  - Burning
- Prevent dumpster divers

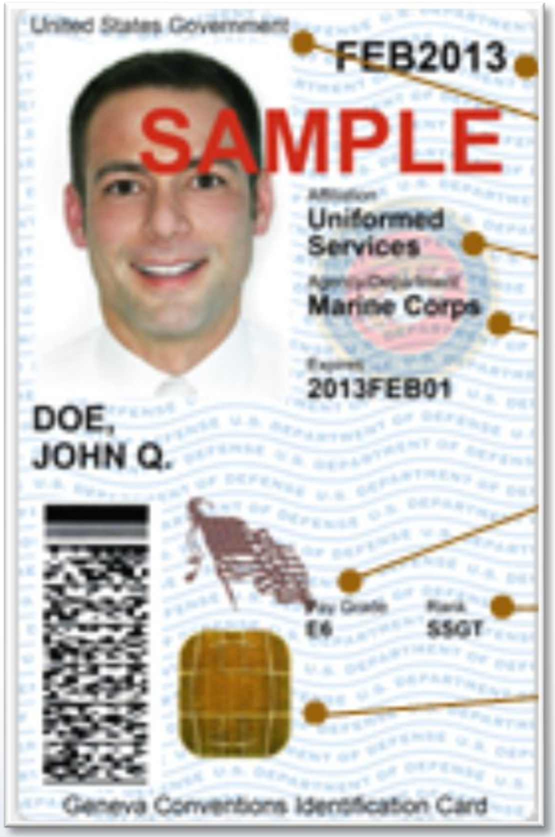
Physical Security - Biometrics

- Use an individual's unique characteristics for identification purposes
- Fingerprint scanner
- Retinal scanner



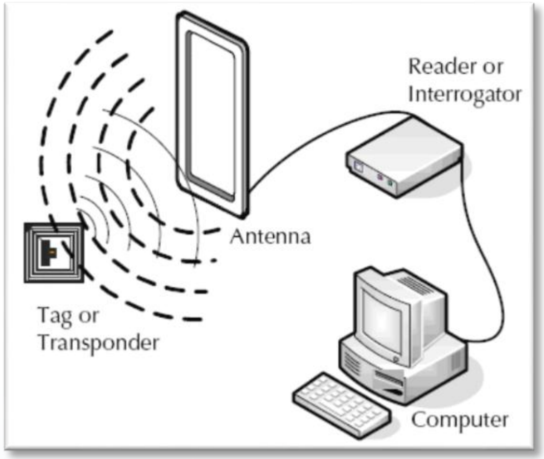
Physical Security - Badges

- Includes picture and name
- Can include
  - Other demographics (DOB, height, weight, department, etc.)
  - Expiration date
  - Bar codes
  - Seals, icons, layered images
  - Embedded micro chips



Physical Security – Key FOB/RFID Badge

- Electronic device that permits access to a locked area when in proximity to a detector.
- RFID – Radio Frequency ID
  - Electronic device that responds via radio waves, when queried by a RFID reader/antenna



Physical Security – RSA Token

- Electronic device that enables two factor authentication
- Two factor authentication - two or more of:
  - Something only the user knows (i.e. password)
  - Something only the user has (i.e. RSA Token code)
  - Something only the user is (biometrics)

Physical Security – Privacy Filter

- Display filter which only allows viewing of display information when immediately in front of the display

- Anti-virus software
- Anti-spyware software
- Firewall
- User authentication
- Directory/folder permissions

User Education

- Informing end users of security principles and practices
  - Sharing of password and log-in sessions
  - Password complexity
  - Defending against social engineering attempts
  - Restricting user permissions
  - Changing default user names
  - Downloading malware

Principal of Least Privilege

- Give the minimal access necessary to complete a specific task
- Similar in concept to a “need to know”

Security Threats – Social Engineering

- Uses deception or trickery to convince unsuspecting users to provide confidential information or access
- Spoofing
- Impersonation
- Hoax
- Phishing/Vishing
- Whaling
- Spam/spim

Security Threats – Malware

- Unwanted software with the potential to do damage to a system, enabling further attacks, transmit data, corrupt or erase files
  - Virus – spread by opening executable file
  - Worm – spreads on own through network
  - Trojan Horse – appears as legitimate software
  - Logic Bomb – event triggered
  - Adware – automatically displays ads
  - Rootkit – gains admin/root access
  - Spam – email based fraudulent ads

Best Security Practices

- Requiring passwords
- Setting strong passwords (random > 8 characters)
- Restrict user permissions (avoid admin accounts)
- Change default user name (avoid “administrator” user name)
- Disable guest account
- Enable screensaver password
- Disable autorun

Data Destruction / Disposal

- Low level format – writing sector markings to disk like it is done during manufacturing process
- Standard format – OS level function that builds file allocation table structure and checks and marks error prone sectors of the disk
- Drive wipe – process of removing traces of data from a storage device
- Overwrite – write random data over old data multiple times

Physical Destruction

- Shredder – paper and optical media
- Drill – physical destruction of hard disks
- Electromagnetic – magnets create field to scramble magnetic information on magnetic media
- Degaussing Tool – removes the magnetic properties of magnetic media

Secure a SOHO Wifi Network

- Change default SSID login and passwords
- Change default SSID
- Setting WPA2 AES/CCMP encryption
- Disable SSID broadcast
- Enable MAC filtering
- Access point placement
- Use directional antennas
- Adjust radio power levels
- Turn off DHCP/assign static IP
- Physical security

Secure a SOHO Wired Network

- Change default usernames and passwords
- Enable MAC filtering
- Turn off DHCP/assign static IP
- Disable external ports
- Physical security

THANK YOU