

سبر 1213 Network Defense

Lecture #2 Part 1 Understanding Identity and Access Management



Topics:

- ✓ Exploring Authentication Management
- ✓ Managing Accounts
- ✓ Comparing Authentication Services
- ✓ Comparing Access Control Schemes



Exploring Authentication Concepts

- **Identification**
 - User professes an identity
- **Authentication**
 - User proves identity
- **Authorization**
 - Access to resources granted based on proven identity

Exploring Authenticati on Concepts

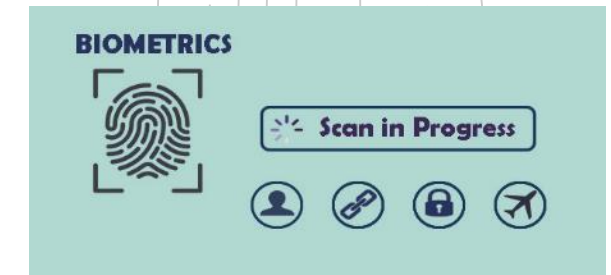
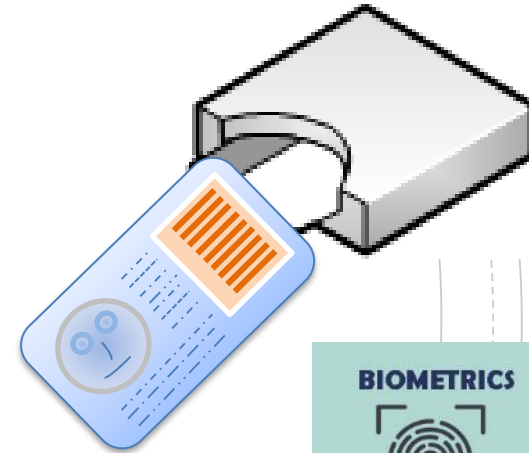
- **AAA (authentication, authorization, and accounting)**
- **Accounting**
- **Audit trail**

Factors of Authentication

- **Something you know**
 - Such as username and password
- **Something you have**
 - Such as a smart card
- **Something you are**
 - Such as a fingerprint or other biometric identification



username:
password:
* * * * *



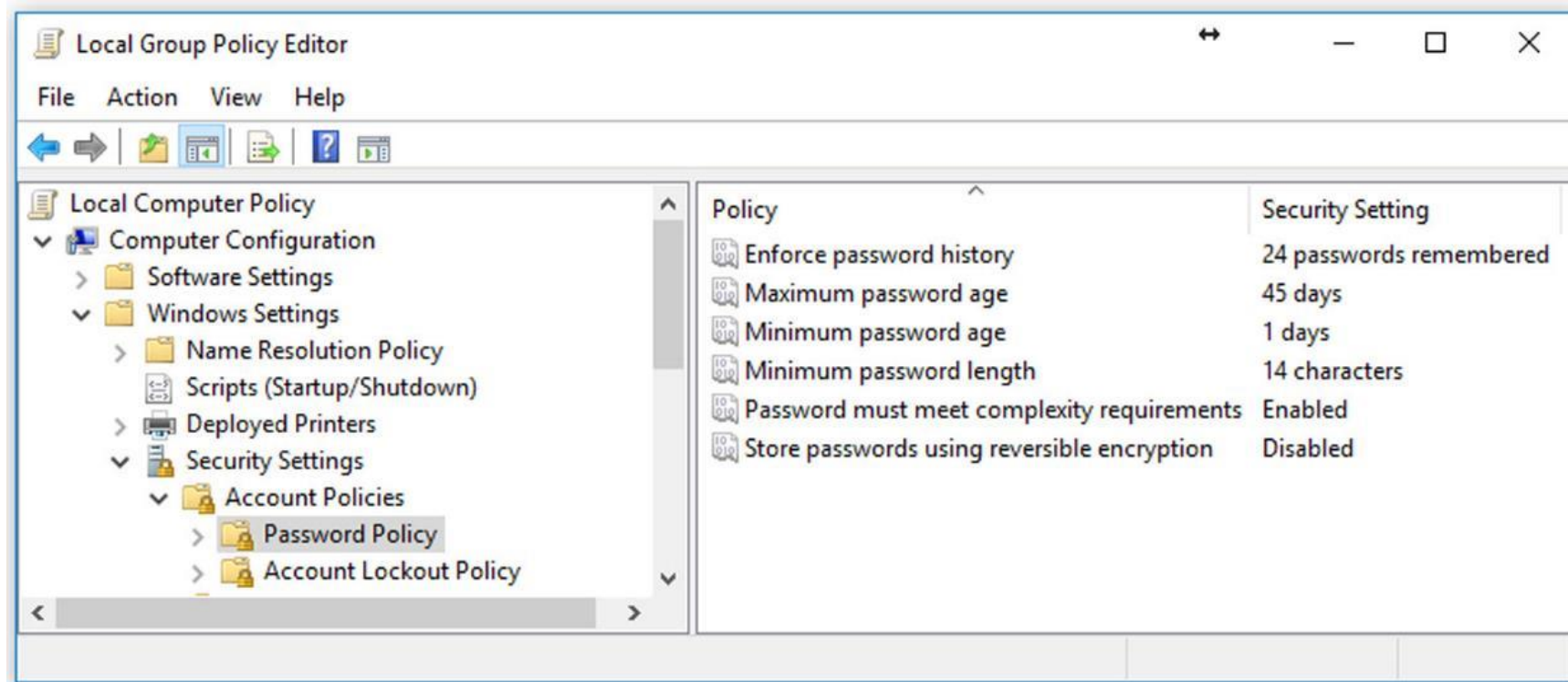
Something You Know

- **Password complexity**
 - Uppercase, lowercase, numbers, special characters
- **Password expiration**
 - Forces users to change password
- **Password vaults**
- **Password history and password reuse**
 - Prevents users from reusing same password



Something You Know

- Password policy settings

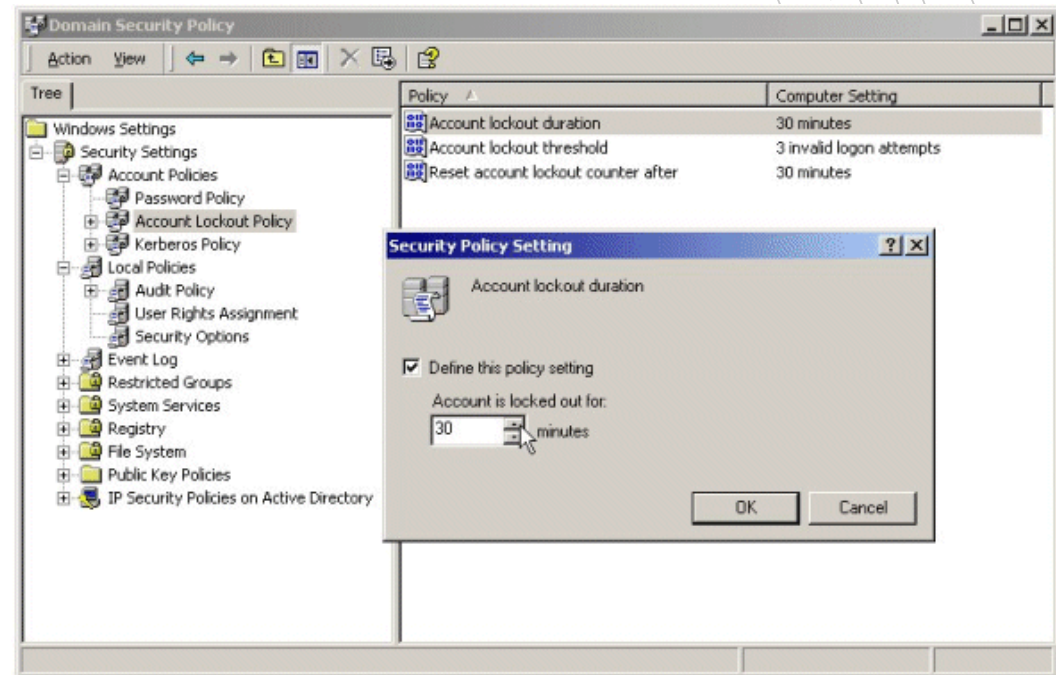


Something You Know





- **Account lockout policies**

- Account lockout threshold

- Account lockout duration



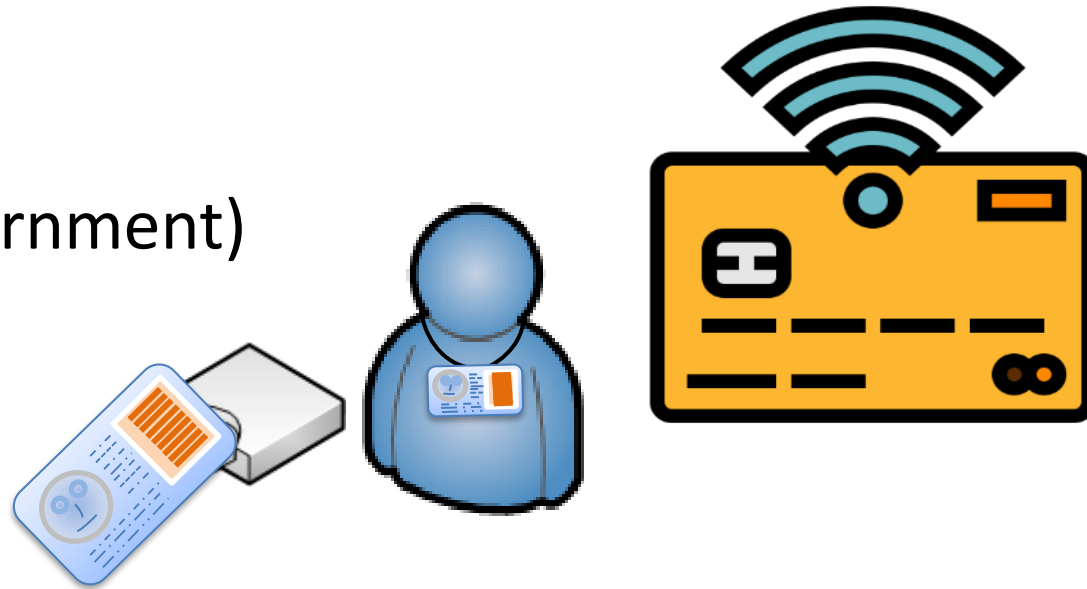
Something You Know

- Password keys
- Knowledge-Based Authentication 
- Implementing Account Lockout Policies 
- Changing Default Passwords 
- Training Users About Password Behaviors 



Something You Have

- **Smart cards**
 - CACs and PIVs (US government)



- **Tokens or Key fobs**



Something You Have

- HOTP and TOTP used in hardware tokens
- **HOTP**
 - HMAC-based One-Time Password
- **TOTP**
 - Time-based One-Time Password
 - Expire after 30 seconds



Something You Have

- **Authentication applications**



- **Two-Step Verification**
 - Sent via SMS, a phone call, a push notification



Something You Are

- **Biometrics Methods**
 - Fingerprint, thumbprint, or handprints
 - Retinal scanners (scans the retina of one or both eyes)
 - Iris scanners (scans the iris of one or both eyes)

