

Authentication

Overview

Authentication is the process of verifying a user's or system's claimed identity, distinct from identification which is simply claiming that identity. The primary mechanisms for authentication include something you know (passwords, PINs), something you have (security keys, phones), and something you are (biometrics). Multi-factor authentication (MFA) combines two or more of these mechanisms to significantly enhance security against compromised single factors.

Key Information

- Something You Know - Includes passwords, passphrases, and PINs that users memorize; examples include complex strings like "4SNoPawKkdFiCdnm" and numeric codes like "25063"
 - Something You Have - Physical objects such as hardware security keys (Yubico, Titan Security Key), SIM cards, or mobile phones used to receive verification codes via SMS or NFC
 - Something You Are - Biometric authentication methods including fingerprint readers, facial recognition, retina scanners, and voice recognition that are becoming increasingly affordable and reliable
 - Multi-Factor Authentication (MFA) - Combines two or more authentication mechanisms to provide layered security; classic example is an ATM requiring both a debit card (something you have) and a PIN (something you know)
 - Real-World Applications - Authentication is essential in everyday scenarios like gym membership verification, mobile phone unlocking, banking systems, and instant messaging app registration
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Notes

Task

1. .

Conclusion

Understanding the three primary authentication mechanisms and their combinations through MFA is critical for designing secure systems. Organizations and individuals should implement MFA where possible, as it substantially reduces the risk of unauthorized access even if one authentication factor is compromised. The evolving affordability and reliability of biometric technologies make MFA increasingly practical for widespread deployment across both enterprise and consumer applications.

Resources

- **TryHackMe:** [Intro to Cryptography](#)
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