

# Password Policy

## Advice for system owners

The NCSC is working to reduce organisations' reliance on users having to recall large numbers of complex passwords. The advice below advocates a greater reliance on technical defences and organisational processes, with passwords forming just one part of your wider access control and identity management approach.

### How passwords are discovered...

#### Interception

Passwords can be intercepted as they travel over a network.



#### Brute force

Automated guessing of billions of passwords until the correct one is found.



#### Manual guessing

Details such as dates of birth or pet names can be used to guess passwords.



#### Stealing passwords

Insecurely stored passwords can be stolen, such as ones written on sticky notes and kept near (or on) devices.



#### Phishing & coercion

Using social engineering techniques to trick people into revealing passwords.



#### Data breaches

Using the passwords leaked from data breaches to attack other systems.



### ...and how to improve system security.

#### Reduce your reliance on passwords



1. Only use passwords where they are needed and appropriate.
2. Consider alternatives to passwords such as SSO, hardware tokens and biometric solutions.
3. Use MFA for all important accounts and internet-facing systems.

#### Implement technical solutions



1. Throttling or account lockout can defend against brute force attacks.
2. For lockout, allow between 5-10 login attempts before locking out.
3. Consider using security monitoring to defend against brute force attacks.
4. Password blacklisting prevents common passwords being used.

#### Protect all passwords



1. Ensure corporate web apps requiring authentication use HTTPS.
2. Protect any access management systems you manage.
3. Choose services and products that protect passwords using standards such as SHA-256.
4. Protect access to user databases.
5. Prioritise administrators, cloud accounts and remote users.

#### Stealing hashes

Stolen hash files can be broken to recover the original passwords.



#### Password spraying

Trying a small number of commonly-used passwords to access a large number of accounts.



#### Help users generate better passwords



1. Be aware of different password generation methods.
2. Use built-in password generators when using password managers.
3. Don't use complexity requirements.
4. Avoid the creation of passwords that are too short.
5. Don't impose artificial capping on password length.

#### Help users cope with password overload



#### Key messages for staff training



1. Emphasise the risks of re-using passwords across work and home accounts.
2. Help users to choose passwords that are difficult to guess.
3. Help users to prioritise their high value accounts.
4. Consider making your training applicable to users' personal lives.