## Password Best Practices

It's important to keep up with your "cyber hygiene" to ensure you don't become a victim of digital fraud. The best strategy you can use to avoid becoming a victim is to use different passwords and usernames.

Try thinking of a sentence or a saying and then choose a password that takes certain characters from that:

- Will the Chicago Bears ever win another Super Bowl? This can be changed to ?WtCBewaSprBwl20

Think of a line from a song or book that you know by heart and select characters from that (did you know you can use spaces as characters?):

- Do you believe in love (Huey Lewis) can be changed to Dubi luv 2?

Avoid choosing a password that spells a "dictionary" word. But, if you must, then:

- Introduce "silent" characters into the word. Example: va7ni9llaisc3am
- Deliberately misspell the word or phrase. Example: chokluttmilc
- Choose a word that is not composed of smaller words.



## Password Hints

- Never send a password by email, instant message, or any other means of communication that is not reliably secure.
- If you don't want to memorize multiple passwords, consider using a password manager. The best password managers will automatically update stored passwords, keep them encrypted, and require multi-factor authentication for access.
- Don't store a password on the device it is designed to protect.
- Passwords should be at least 12 characters long but 14 or more is better.
- It's ok to write your passwords down, as long as you keep them secure. Don't write them on sticky notes or cards that you keep near the device the password protects, even if you think they're well-hidden; they could be discovered.

Do you have your passwords in your cell phone, maybe in the memo section? What if you lose your phone? Make sure your phone is protected too by using a secure PIN, or fingerprint or
facial recognition if your phone offers it. Consider removing any passwords you have stored on your phone.

More on Passwords: Sometimes the Longer the Better
This chart proves that longer passwords are more effective:

## TIME IT TAKES A HACKER TO BRUTE FORCE YOUR PASSWORD

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| Number of Characters | Numbers Only | Lowercase Letters | Upper and Lowercase Letters | Numbers, Upper and Lowercase Letters | Numbers, Upper and Lowercase Letters, Symbols |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 4 | Instantly | Instantly | Instantly | Instantly | Instantly |
| 5 | Instantly | Instantly | Instantly | Instantly | Instantly |
| 6 | Instantly | Instantly | Instantly | 1 sec | 5 secs |
| 7 | Instantly | Instantly | 25 secs | 1 min | 6 mins |
| 8 | Instantly | 5 secs | 22 mins | 1 hour | 8 hours |
| 9 | Instantly | 2 mins | 19 hours | 3 days | 3 weeks |
| 10 | Instantly | 58 mins | 1 month | 7 months | 5 years |
| 11 | 2 secs | 1 doy | 5 years | 41 years | 400 years |
| 12 | 25 secs | 3 weeks | 300 years | 2 k years | 34 k years |
| 13 | 4 mins | 1 year | 16 k years. | 100k yeors | 2 m years |
| 14 | 41 mins | 51 years | 800 k years | 9 m years | 200 m years |
| 15 | 6 hours | 1 k years | 43 m years | 600 m years | 15 bn years |
| 16 | 2 days | 34 k years | 2 bn years | 37 bn years | 1 in years |
| 17 | 4 weeks | 800k years | 100bn years | 2 m years | 93 tn years |
| 18 | 9 months | 23 m years | 6 th years | 100 th years | 7qd years |
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