

# Cracking an encrypted or hashed password

How to crack a password knowing its stored form?

- Guessing attack (default and common passwords)
- Brute force attack
- Dictionary attack
- Rainbow tables

What are the counter-measures?

- Protect it well at the OS or application level
- Store it somewhere else (portable device, kerberos, ...)

Tools : John the Ripper, HashCat

# Password Strength

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	57 minutes	2 hours	4 hours
6	Instantly	46 minutes	2 days	6 days	2 weeks
7	Instantly	20 hours	4 months	1 year	2 years
8	Instantly	3 weeks	15 years	62 years	164 years
9	2 hours	2 years	791 years	3k years	11k years
10	1 day	40 years	41k years	238k years	803k years
11	1 weeks	1k years	2m years	14m years	56m years
12	3 months	27k years	111m years	917m years	3bn years
13	3 years	705k years	5bn years	56bn years	275bn years
14	28 years	18m years	300bn years	3tn years	19tn years
15	284 years	477m years	15tn years	218tn years	1qd years
16	2k years	12bn years	812tn years	13qd years	94qd years
17	28k years	322bn years	42qd years	840qd years	6qn years
18	284k years	8tn years	2qn years	52qn years	463qn years

**Time it takes  
a hacker to  
brute force  
your password  
in 2025**

**Hardware: 12 x RTX 5090  
Password hash: bcrypt (10)**



**Hive Systems**

**Read more and download at  
[hivesystems.com/password](https://hivesystems.com/password)**