

## Password Cracking

Password cracking is the process of attempting to gain Unauthorized access to restricted systems using common passwords or algorithms that guess passwords. In other words, it's an art of obtaining the correct password that gives access to a system protected by an authentication method.

Password cracking refers to various measures used to discover computer passwords. This is usually accomplished by recovering passwords from data stored in, or transported from, a computer system. Password cracking is done by either repeatedly guessing the password, usually through a computer algorithm in which the computer tries numerous combinations until the password is successfully discovered.

Password cracking can be done for several reasons, but the most malicious reason is in order to gain unauthorized access to a computer without the computer owner's awareness. This results in cybercrime such as stealing passwords for the purpose of accessing banking information. Other, nonmalicious, reasons for password cracking occur when someone has misplaced or forgotten a password.

The purpose of password cracking is as follows:

- To recover a forgotten password
- Testing the strength of a password
- To gain unauthorized access to a system

**Manual password cracking** is a process of trying out different password combinations and checking if each one of them working or not and is quite a time consuming process. Manual password cracking involves:

1. Find a valid user account
2. Create a list of possible passwords (dictionary)
3. Rank the passwords from high to low probability
4. Key-in each password
5. Try again until a successful password is found

Sometimes password can be guessed with the prior knowledge of the target user's information.

Different characteristics of a guessable password are as follows:

- Blank (no password)

- General passwords like password, admin, 123456, etc.
- Series of letters like QWERTY
- User's name or login name
- Name of user's friend/relative/pet
- User's birth date or birth place
- User's vehicle number, office number, residence or mobile number
- Name of a celebrity or idol
- Simple modification of the above mentioned passwords (like adding numbers)

### **Password Cracking Techniques**

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Password cracking can be classified into three types:

- Online attacks
- Offline attacks
- Non-electronic attacks (social engineering, shoulder surfing, dumpster diving etc)

