Module:- SECURITY CONCEPT

(John The Ripper)

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John The Ripper

John The Ripper (JTR) is one of the most popular password cracking tools available in most Penetration testing Linux distributions like Kali Linux, Parrot OS, etc. The tool has been used in most Cyber demos, and one of the most popular was when it was used by the Varonis Incident Response Team. John The Ripper password cracking utility brags of a user-friendly command-line interface and the ability to detect most password hash types.

Password Cracking With John the Ripper (JtR)

Password cracking with JtR is an iterative process.A word is selected from the wordlist, hashed with the same hash algorithm used to hash the password, and the resulting hash is compared with the password hash.If they match, then the word picked from the wordlist is the original password. If they don't match,JtR will pick another word to repeat the same process until a match is found.And as you guessed it!This process can take some time if the password used was complex.John the Ripper supports most encryption technologies found in UNIX and Windows systems.

Modes of Password Cracking

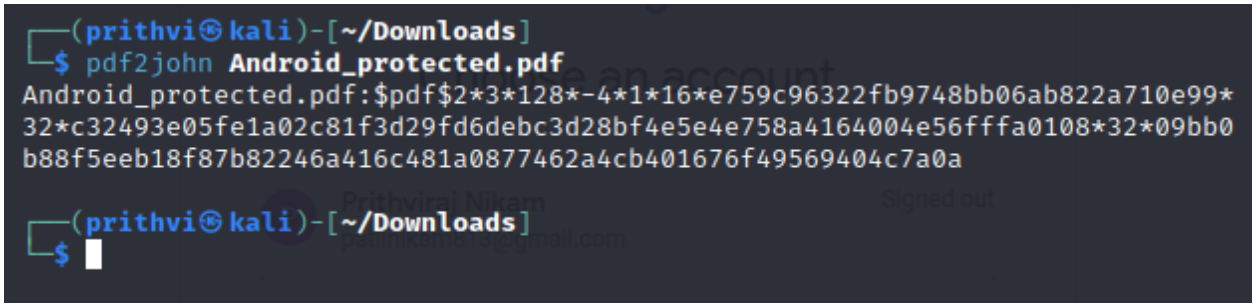
JtR supports 3 main modes of password cracking:

- **Single Mode Crack**: JtR tries to use usernames found on the GECOS field and test them as possible passwords. GECOS is a field of each record in the **/etc/passwd** file on UNIX systems.
- **Wordlist mode**: JtR tries all the password combinations in a wordlist file.
- **Incremental mode (aka Brute-Force attack)**: JtR tries all character combinations to crack the password.

Step-1:- First,you have to set password and protect any file.Then you can check the file
 # cd Downloads
 # ls

Step-2:-get the password hash
To get the password hash to be cracked, we need to enter the command:

 # pdf2john Android_protected.pdf
Protected File name

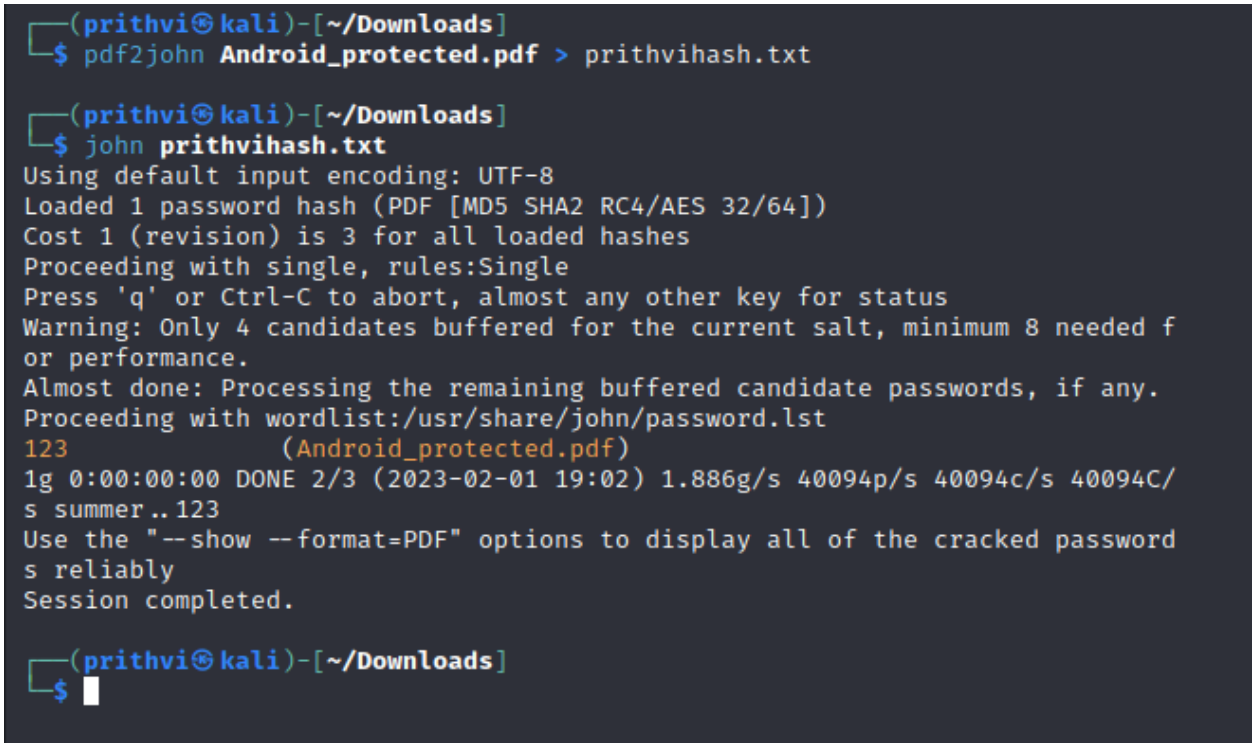


Step-3:-put the password hash in a text file
Type the following command :

 # pdf2john Android_protected.pdf > prithvihash.txt
Protected File name

Followed by:

 # john prithvihash.txt



Step-4:- Also used to “--show” for password showing

 # sudo john prithvihash.txt - - show

```
┌──(prithvi㉿kali)-[/usr/share/wordlists]
└─$ sudo john prithvihash.txt --show
Android_protected.pdf:123

1 password hash cracked, 0 left

┌──(prithvi㉿kali)-[/usr/share/wordlists]
└─$
```

Step-5:- Now go to wordlist extract the rockyou.txt.gz File
#cd /usr/share/wordlists/
#sudo gunzip rockyou.txt.gz

```
┌──(prithvi㉿kali)-[~]
└─$ cd /usr/share/wordlists/

┌──(prithvi㉿kali)-[/usr/share/wordlists]
└─$ ls
amass  dirb  dirbuster  fasttrack.txt  fern-wifi  john.lst  legion  metasplo

┌──(prithvi㉿kali)-[/usr/share/wordlists]
└─$ sudo gunzip rockyou.txt.gz
[sudo] password for prithvi:

┌──(prithvi㉿kali)-[/usr/share/wordlists]
└─$ ls
amass  dirb  dirbuster  fasttrack.txt  fern-wifi  john.lst  legion  metasplo

┌──(prithvi㉿kali)-[/usr/share/wordlists]
└─$
```

Step-6:- Now copy the prithvihash.txt to /usr/share/wordlists/

 # cp prithvihash.txt /usr/share/wordlists/

```
┌──(prithvi㉿kali)-[~]
└─$ cd Downloads

┌──(prithvi㉿kali)-[~/Downloads]
└─$ ls
Android_protected.pdf            opencti-master.zip  rockyou.txt
Nessus-10.4.1-debian9_amd64.deb  prithvihash.txt
opencti-master                   prithvi.txt

┌──(prithvi㉿kali)-[~/Downloads]
└─$ cp prithvihash.txt /usr/share/wordlists/
cp: cannot create regular file '/usr/share/wordlists/prithvihash.txt': Permi
ssion denied

┌──(prithvi㉿kali)-[~/Downloads]
└─$ sudo cp prithvihash.txt /usr/share/wordlists/
[sudo] password for prithvi:

┌──(prithvi㉿kali)-[~/Downloads]
└─$ cd /usr/share/wordlists/

┌──(prithvi㉿kali)-[/usr/share/wordlists]
└─$ ls
amass       fasttrack.txt  john.lst    nmap.lst         sqlmap.txt
dirb        fern-wifi      legion      prithvihash.txt  wfuzz
dirbuster   hacker.txt     metasploit  rockyou.txt      wifite.txt
```

Step-7:- Sometimes you may need to customize or create your own wordlist or use a different wordlist the command follows the following format

 # john --wordlist= /usr/share/wordlists/rockyou.txt - - formate =PDF prithvihash.txt

 # sudo john prithvihash.txt - - show

```
┌──(prithvi㉿kali)-[/usr/share/wordlists]
└─$ john --wordlist= /usr/share/wordlists/rockyou.txt --format=PDF prithvihash.txt
Warning: invalid UTF-8 seen reading /usr/share/wordlists/rockyou.txt
Using default input encoding: UTF-8
Loaded 1 password hash (PDF [MD5 SHA2 RC4/AES 32/64])
No password hashes left to crack (see FAQ)

┌──(prithvi㉿kali)-[/usr/share/wordlists]
└─$ sudo john prithvihash.txt --show
Android_protected.pdf:123

1 password hash cracked, 0 left
```