## Arşiv Dosyalarına Uygulanan Wordlist Parola Kırma Saldırısı Testi

Hangi arşiv dosyasının parola koruması daha yüksek?

Zip, Rar ve 7z dosya türlerinde yapılan parola kırma testi gerçekleştirilerek veri güvenliği test edilmiştir.

Hazırlayan: Beytullah Akyüz

# Sistem ve Yazılım Bilgileri

İşletim Sistemi	ParrotOS 6.0 - x64		
İşlemci	Amd Ryzen 7 7700X / 8 Çekirdek 16 İş Parçacığı		
Bellek	64 GB DDR5		
Winrar	6.24 - x64		
7-Zip	23.01 - x64		
John the Ripper	1.9.0-jumbo-1 – x64		

## Test Hakkında Bilgilendirme

#### Açıklama;

Aynı parola kullanılarak aynı içeriğe sahip (<u>983 KB</u> boyutundaki bir dosya) farklı arşiv dosyalarına <u>Wordlist</u> parola kırma testi gerçekleştirilmiştir.

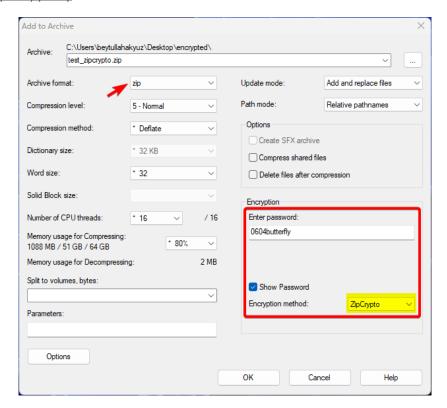
Yapılan parola kırma saldırısında <u>rockyou</u> wordlist'i ve dosyada **13.977.450.** sırada bulunan "<u>0604butterfly</u>" parolası kullanılmıştır.

#### Test yapılan arşiv türleri;

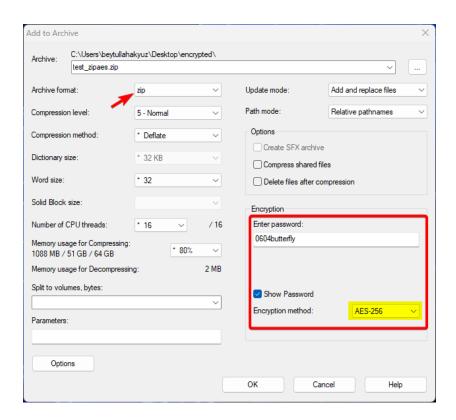
Arşiv türü	Şifreleme Yöntemi
Zip-Legacy	zipcrypto
Zip-AES	aes-256
Rar	rar5
Rar4	rar4
7z	7z

# Arşiv Oluşturma Süreci

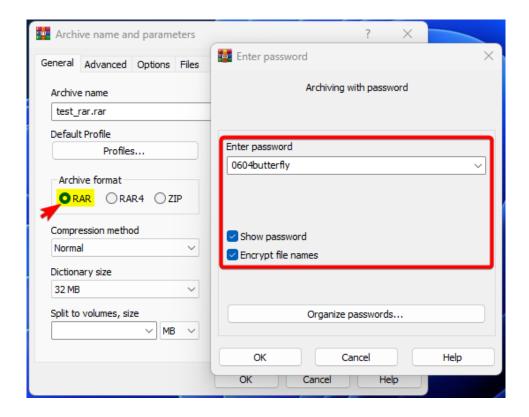
#### Zip - Legacy (Zipcrypto)



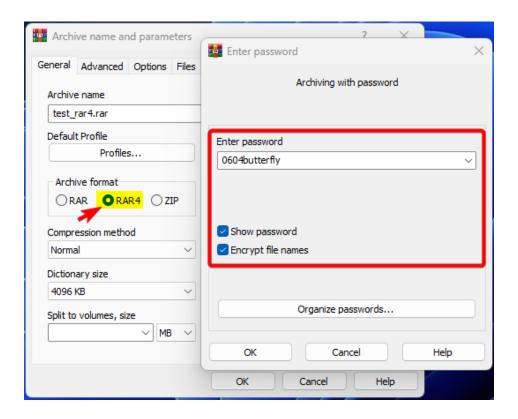
### <u>Ziρ – AES-256</u>

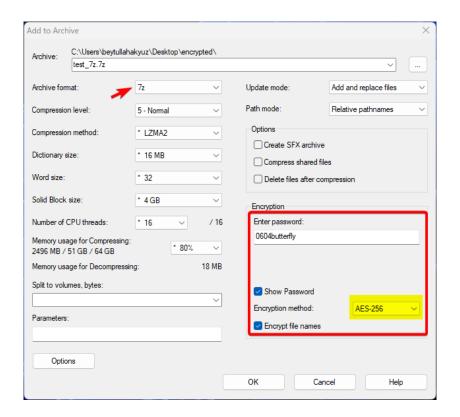


#### Rar - RAR5



#### Rar - RAR4





## Test Sonuçları

Arşiv Bilgisi	Dosya Türü / Şifreleme	Parola Kırılma Süresi sa:dk:sn	Ortalama Hız (ρ/sn)
Arşiv içeriği; 983 KB – Powerpoint sunusu Dosya parolası; 0604butterfly	Zip / zipcrypto	< 00:00:00	~
	Zip / aes-256	00:00:20	688160
	Rar/rar5	00:22:14	10473
	Rar/rar4	03:27:15	1123
	7z / aes-256	11:32:55	336.1

# Tartışma

Yapılan test sonucunda 7z arşiv türünün diğer arşiv türlerine oranlar bariz bir farkla daha yüksek bir güvenlik sağladığı görünmektedir. 7z'e en yakın yüksek güvenlik sağlayan rar4'e **3,3433 kat** yüksek koruma sağlamıştır.

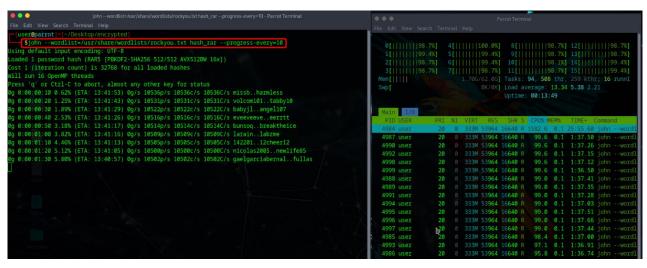
Testin ilginç sonuçlarından biri ise rar5'in dosya güvenliğinde rar4'ün gerisinde kalmış olmasıdır. Rar4, rar5'e göre **9,3146 kat** yüksek koruma sağlamıştır.

### Test Görüntüleri

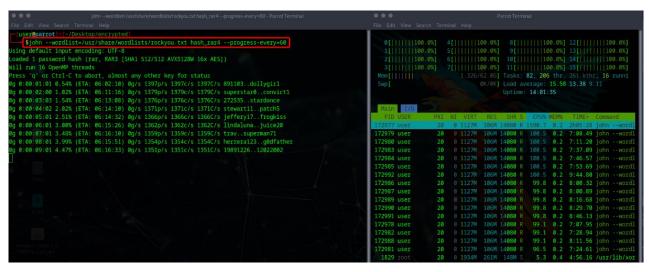
#### Zip - Legacy (Zipcrypto)

#### Zip - AES-256

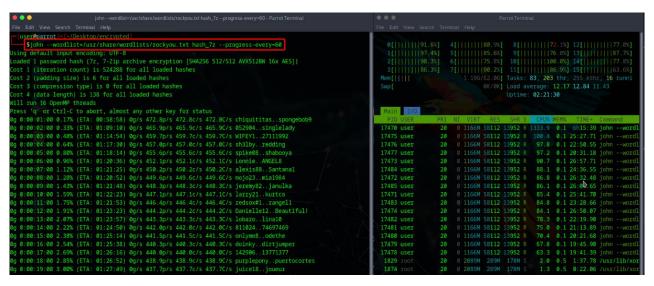
```
john --wordlist=/usr/share/wordlists/rockyou.txt hash_zipaes --progress-every=5 - Parrot Terminal
  [user@parrot]-[~/Desktop/encrypted]
    $john --wordlist=/usr/share/wordlists/rockyou.txt hash_zipaes --progress-every=5
Jsing default input encoding: UTF-8
.oaded 1 password hash (ZIP, WinZip [PBKDF2-SHA1 512/512 AVX512BW 16x])
Cost 1 (HMAC size) is 988396 for all loaded hashes
Will run 16 OpenMP threads
Press 'q' or Ctrl-C to abort, almost any other key for status
0g 0:00:00:05 23.80% (ETA: 13:14:22) 0g/s 693910p/s 693910c/s 693910C/s stefy&marco!..sp.pierre1seb2
0g 0:00:00:10 48.18% (ETA: 13:14:21) 0g/s 691913p/s 691913c/s 691913C/s jodokah..jhuliean
0g 0:00:00:15 73.19% (ETA: 13:14:21) 0g/s 690538p/s 690538c/s 690538C/s aaron6966..XhandrA04
0g 0:00:00:20 96.71% (ETA: 13:14:21) 0g/s 688307p/s 688307c/s 688307C/s 0820321952..078698686
0604butterfly (test_zipaes.zip/Parolalar.pptx)
1g 0:00:00:20 DONE (2024-02-24 13:14) 0.04906g/s 688160p/s 688160c/s 688160C/s 064049725..050340180
Use the "--show" option to display all of the cracked passwords reliably
Session completed.
```



```
0g 0:00:16:40 73.16% (ETA: 13:37:50) 0g/s 10476p/s 10476c/s 10476C/s YONOFUI...YL7115
0g 0:00:16:50 73.88% (ETA: 13:37:51) 0g/s 10477p/s 10477c/s 10477C/s Sunney237..SueWard69@
0g 0:00:17:00 74.62% (ETA: 13:37:50) 0g/s 10477p/s 10477c/s 10477C/s ROODLY31..ROL0123
0g 0:00:17:10 75.35% (ETA: 13:37:50) 0g/s 10477p/s 10477c/s 10477C/s NIPPY23..NIKITALUNA
0g 0:00:17:20 76.08% (ETA: 13:37:50) 0g/s 10478p/s 10478c/s 10478C/s Luvyajeff!..Lumazhiittha
0g 0:00:17:30 76.80% (ETA: 13:37:51) 0g/s 10478p/s 10478c/s 10478C/s K5238249534267f..K0pKaaS
0g 0:00:17:40 77.54% (ETA: 13:37:51) 0g/s 10478p/s 10478c/s 10478C/s Hamster26..Haidel
0g 0:00:17:50 78.27% (ETA: 13:37:51) 0g/s 10478p/s 10478c/s 10478C/s EILLEK89..EDWIN131981
0g 0:00:18:00 79.01% (ETA: 13:37:50) 0g/s 10479p/s 10479c/s 10479C/s CHRISTINORONALDO..CHOMJ
0g 0:00:18:10 79.74% (ETA: 13:37:51) 0g/s 10479p/s 10479c/s 10479C/s Ande5866..Amybelle18
0g 0:00:18:20 80.56% (ETA: 13:37:49) 0g/s 10479p/s 10479c/s 10479C/s 9879459301..98765412345
ng 0:00:18:30 81.25% (ETA: 13:37:50) 0g/s 10479p/s 10479c/s 10479C/s 92350950..9229559544
0g 0:00:18:40 81.95% (ETA: 13:37:50) 0g/s 10479p/s 10479c/s 10479C/s 8684811..867358
g 0:00:18:50 82.62% (ETA: 13:37:51) 0g/s 10479p/s 10479c/s 10479C/s 78DENISE..789717eg
0g 0:00:19:00 83.27% (ETA: 13:37:53) 0g/s 10479p/s 10479c/s 10479C/s 7028826..70177912
ng 0:00:19:10 83.93% (ETA: 13:37:54) 0g/s 10479p/s 10479c/s 10479C/s 6274223536..6268356672
0g 0:00:19:20 84.59% (ETA: 13:37:55) 0g/s 10479p/s 10479c/s 10479C/s 560336..55m4501s
0g 0:00:19:30 85.25% (ETA: 13:37:56) 0g/s 10478p/s 10478c/s 10478C/s 50123040124..501030204
0g 0:00:19:40 85.94% (ETA: 13:37:57) 0g/s 10478p/s 10478c/s 10478C/s 45131190..4510963210
0g 0:00:19:50 86.61% (ETA: 13:37:57) 0g/s 10478p/s 10478c/s 10478C/s 3V01ZS..3DC4LIFE
og 0:00:20:00 87.26% (ETA: 13:37:59) 0g/s 10478p/s 10478c/s 10478C/s 32436..323925
0g 0:00:20:10 87.96% (ETA: 13:37:59) 0g/s 10476p/s 10476c/s 10476C/s 2914501..29111416
0g 0:00:20:20 88.65% (ETA: 13:38:00) 0g/s 10476p/s 10476c/s 10476C/s 25065147..25041889
0g 0:00:20:30 89.34% (ETA: 13:38:00) 0g/s 10476p/s 10476c/s 10476C/s 2202198626111988..22/05/91ah
g 0:00:20:40 90.06% (ETA: 13:38:00) 0g/s 10476p/s 10476c/s 10476C/s 1penhall..1ormore
0g 0:00:20:50 90.79% (ETA: 13:38:00) 0g/s 10475p/s 10475c/s 10475C/s 1943jlk..1939693
g 0:00:21:00 91.52% (ETA: 13:38:00) 0g/s 10475p/s 10475c/s 10475C/s 15705392..1565215652
g 0:00:21:10 92.25% (ETA: 13:38:00) 0g/s 10475p/s 10475c/s 10475C/s 12935948..1289312893
g 0:00:21:20 92.99% (ETA: 13:38:00) 0g/s 10475p/s 10475c/s 10475C/s 11136848..111222t
ng 0:00:21:30 93.73% (ETA: 13:38:00) 0g/s 10474p/s 10474c/s 10474C/s 0928798529..092865444460
ng 0:00:21:40 94.57% (ETA: 13:37:58) 0g/s 10474p/s 10474c/s 10474C/s 0890014794..088381944
ng 0:00:21:50 95.39% (ETA: 13:37:57) 0g/s 10474p/s 10474c/s 10474C/s 0853810107..0853510927
g 0:00:22:00 96.21% (ETA: 13:37:55) 0g/s 10473p/s 10473c/s 10473C/s 0820389830..0819932980
0q 0:00:22:10 97.01% (ETA: 13:37:55) 0q/s 10473p/s 10473c/s 10473c/s 070504330,.070351311
 604butterfly
                (test_rar.rar)
g 0:00:22:14 DONE (2024-02-24 13:37) 0.000749g/s 10473p/s 10473c/s 10473C/s 060542260..060394z
Jse the "--show" option to display all of the cracked passwords reliably
Session completed.
  [user@parrot]-[~/Desktop/encrypted]
    $
```



```
. . .
0g 0:02:54:03 81.52% (ETA: 06:28:18) 0g/s 1117p/s 1117c/s 1117C/s 90repe83..90406p
0g 0:02:55:05 82.00% (ETA: 06:28:20) 0g/s 1117p/s 1117c/s 1117C/s 865928..8602655d
0g 0:02:56:00 82.42% (ETA: 06:28:21) 0g/s 1118p/s 1118c/s 1118C/s 8111032..80858679
0g 0:02:57:01 82.89% (ETA: 06:28:22) 0g/s 1118p/s 1118c/s 1118C/s 7631718..7569974
0g 0:02:58:01 83.34% (ETA: 06:28:24) 0g/s 1119p/s 1119c/s 1119C/s 6prater..69fionnghuala
0g 0:02:59:01 83.81% (ETA: 06:28:25) 0g/s 1119p/s 1119c/s 1119C/s 648477..6430411
0g 0:03:00:02 84.27% (ETA: 06:28:28) 0g/s 1120p/s 1120c/s 1120C/s 59774560..592080
0q 0:03:01:02 84.73% (ETA: 06:28:28) 0q/s 1120p/s 1120c/s 1120C/s 5527698827..54MASTERS0716
og 0:03:02:04 85.19% (ETA: 06:28:32) 0g/s 1121p/s 1121c/s 1121C/s 51031998..5055bj
0q 0:03:03:00 85.63% (ETA: 06:28:31) 0q/s 1121p/s 1121c/s 1121C/s 4811334129..477613
g 0:03:04:02 86.10% (ETA: 06:28:32) 0g/s 1121p/s 1121c/s 1121C/s 44112460109..436915s
g 0:03:05:03 86.57% (ETA: 06:28:35) 0g/s 1122p/s 1122c/s 1122C/s 3thaka344..3ilovemoe
0q 0:03:06:05 87.03% (ETA: 06:28:38) 0q/s 1122p/s 1122c/s 1122C/s 3502071..345588608
g 0:03:07:02 87.46% (ETA: 06:28:39) 0g/s 1122p/s 1122c/s 1122C/s 31477rac..312787
og 0:03:08:00 87.91% (ETA: 06:28:39) 0g/s 1122p/s 1122c/s 1122C/s 29mount..2956267
g 0:03:09:04 88.39% (ETA: 06:28:42) 0g/s 1122p/s 1122c/s 1122C/s 26347 ..260992ds
0q 0:03:10:03 88.83% (ETA: 06:28:45) 0q/s 1123p/s 1123c/s 1123C/s 24393563..24171138
0g 0:03:11:01 89.27% (ETA: 06:28:47) 0g/s 1123p/s 1123c/s 1123C/s 22423183..2222XX
0g 0:03:12:04 89.77% (ETA: 06:28:46) 0g/s 1123p/s 1123c/s 1123C/s 20307693..2012lulu2012
0g 0:03:13:05 90.23% (ETA: 06:28:47) 0g/s 1123p/s 1123c/s 1123C/s 1htbtwow..leinhorn
0g 0:03:14:04 90.71% (ETA: 06:28:46) 0g/s 1123p/s 1123c/s 1123C/s 19820630..1974aga
0q 0:03:15:04 91.16% (ETA: 06:28:47) 0q/s 1123p/s 1123c/s 1123C/s 1790882..175080
0g 0:03:16:03 91.63% (ETA: 06:28:47) 0g/s 1123p/s 1123c/s 1123C/s 15253335..1508170101
0g 0:03:17:01 92.09% (ETA: 06:28:45) 0g/s 1123p/s 1123c/s 1123C/s 13454006..13203512
0g 0:03:18:02 92.58% (ETA: 06:28:43) 0g/s 1123p/s 1123c/s 1123C/s 123456789_00..123000.
0g 0:03:19:01 93.04% (ETA: 06:28:43) 0g/s 1123p/s 1123c/s 1123C/s 1112761479..11041402
0g 0:03:20:00 93.51% (ETA: 06:28:42) 0g/s 1123p/s 1123c/s 1123C/s 1-1294..09playboy
gg 0:03:21:05 94.08% (ETA: 06:28:33) 0g/s 1123p/s 1123c/s 1123C/s 09185243905..091649776
g 0:03:22:03 94.60% (ETA: 06:28:23) 0g/s 1123p/s 1123c/s 1123C/s 0890600345..0879212279
ng 0:03:23:01 95.13% (ETA: 06:28:12) 0g/s 1123p/s 1123c/s 1123C/s 0865055048..0861846360
0g 0:03:24:04 95.71% (ETA: 06:28:02) 0g/s 1123p/s 1123c/s 1123C/s 0845207402..0843407973
ng 0:03:25:01 96.23% (ETA: 06:27:52) 0g/s 1123p/s 1123c/s 1123C/s 082286r..0819034057
ng 0:03:26:01 96.75% (ETA: 06:27:45) 0g/s 1123p/s 1123c/s 1123C/s 079162533..0777969503
ng 0:03:27:04 97.27% (ETA: 06:27:41) 0g/s 1123p/s 1123c/s 1123C/s 062490509..06134207
  04butterfly (test_rar4.rar)
lg 0:03:27:15 DONE (2024-02-25 06:22) 0.000080g/s 1123p/s 1123c/s 1123C/s 061342045..060362164
Jse the "--show" option to display all of the cracked passwords reliably
Session completed.
 -[user@parrot]-[~/Desktop/encrypted]
    $
```



```
0g 0:10:59:00 92.08% (ETA: 02:50:15) 0g/s 335.9p/s 335.9c/s 335.9C/s 132487..132417jb
0g 0:11:00:00 92.22% (ETA: 02:50:14) 0g/s 335.9p/s 335.9c/s 335.9C/s 12apos..12akaru
0g 0:11:01:00 92.37% (ETA: 02:50:13) 0g/s 335.9p/s 335.9c/s 335.9C/s 123maham..123loop
0g 0:11:02:00 92.52% (ETA: 02:50:10) 0g/s 335.9p/s 335.9c/s 335.9C/s 123456789vb..123456789numse
0g 0:11:03:00 92.66% (ETA: 02:50:08) 0g/s 335.9p/s 335.9c/s 335.9C/s 1214817..12141k
0g 0:11:04:00 92.80% (ETA: 02:50:06) 0g/s 335.9p/s 335.9c/s 335.9C/s 1192392j..1191222p
0g 0:11:05:00 92.94% (ETA: 02:50:04) 0g/s 335.9p/s 335.9c/s 335.9C/s 1122345s..11223035846344778990
0g 0:11:06:00 93.09% (ETA: 02:50:01) 0g/s 335.9p/s 335.9c/s 335.9C/s 1100400490444..1100200649
0g 0:11:07:00 93.23% (ETA: 02:50:02) 0g/s 335.9p/s 335.9c/s 335.9C/s 1039448164..10383841
g 0:11:08:00 93.37% (ETA: 02:50:00) 0g/s 335.9p/s 335.9c/s 335.9C/s 1010117a..1010014
ng 0:11:09:00 93.51% (ETA: 02:50:00) 0g/s 335.9p/s 335.9c/s 335.9C/s 09dec1976..09aa06
ng 0:11:10:00 93.67% (ETA: 02:49:53) 0g/s 336.0p/s 336.0c/s 336.0C/s 094477991..094424556
0g 0:11:11:00 93.83% (ETA: 02:49:44) 0g/s 336.0p/s 336.0c/s 336.0C/s 092245621..0922362870
ng 0:11:12:00 93.99% (ETA: 02:49:34) 0g/s 335.9p/s 335.9c/s 335.9C/s 09193501861..09193267098
ng 0:11:13:00 94.15% (ETA: 02:49:25) 0g/s 335.9p/s 335.9c/s 335.9C/s 09109365779..09109032957
0g 0:11:14:00 94.31% (ETA: 02:49:17) 0g/s 335.9p/s 335.9c/s 335.9C/s 08febrery930..08carla
0g 0:11:15:00 94.47% (ETA: 02:49:07) 0g/s 335.9p/s 335.9c/s 335.9C/s 0894494584..0894432159
0g 0:11:16:00 94.63% (ETA: 02:48:58) 0g/s 335.9p/s 335.9c/s 335.9C/s 0878509698..0878451293
0g 0:11:17:00 94.79% (ETA: 02:48:47) 0g/s 336.0p/s 336.0c/s 336.0C/s 0873820217076421709..0873761478
0g 0:11:18:00 94.95% (ETA: 02:48:37) 0g/s 336.0p/s 336.0c/s 336.0C/s 0868608998..0868564298
0g 0:11:19:00 95.12% (ETA: 02:48:27) 0g/s 336.0p/s 336.0c/s 336.0C/s 0862196962..0862128868
0g 0:11:20:00 95.28% (ETA: 02:48:15) 0g/s 336.0p/s 336.0c/s 336.0C/s 0857207256..0857165382
0g 0:11:21:00 95.45% (ETA: 02:48:05) 0g/s 336.0p/s 336.0c/s 336.0C/s 0851904770..0851839812
og 0:11:22:00 95.61% (ETA: 02:47:55) 0g/s 336.0p/s 336.0c/s 336.0C/s 0846897874..0846844001
0g 0:11:23:00 95.77% (ETA: 02:47:46) 0g/s 336.0p/s 336.0c/s 336.0C/s 0841224159..0841180299
ng 0:11:24:00 95.93% (ETA: 02:47:35) 0g/s 336.0p/s 336.0c/s 336.0C/s 0836724202..0836647757
g 0:11:25:00 96.10% (ETA: 02:47:25) 0g/s 336.0p/s 336.0c/s 336.0C/s 0831456999..0831410333
0g 0:11:26:00 96.26% (ETA: 02:47:16) 0g/s 336.1p/s 336.1c/s 336.1C/s 0817697940..081761
g 0:11:27:00 96.42% (ETA: 02:47:05) 0g/s 336.1p/s 336.1c/s 336.1C/s 0810954174..081089201017
ng 0:11:28:00 96.58% (ETA: 02:46:57) 0g/s 336.1p/s 336.1c/s 336.1C/s 0802144058..0802077600
ng 0:11:29:00 96.73% (ETA: 02:46:51) 0g/s 336.1p/s 336.1c/s 336.1C/s 07818438650..07813445634
ng 0:11:30:00 96.88% (ETA: 02:46:49) 0g/s 336.1p/s 336.1c/s 336.1C/s 07301119..07297100
ng 0:11:31:00 97.02% (ETA: 02:46:49) 0g/s 336.1p/s 336.1c/s 336.1C/s 07011970..070074408
q 0:11:32:00 97.18% (ETA: 02:46:42) 0q/s 336.1p/s 336.1c/s 336.1C/s 065170334,.065122864
604butterfly
                (test_7z.7z)
lg 0:11:32:55 DONE (2024-02-25 02:27) 0.000024g/s 336.1p/s 336.1c/s 336.1C/s 060512139..060491100
Jse the "--show" option to display all of the cracked passwords reliably
Session completed.
 [user@parrot] = [~/Desktop/encrypted]
    $
```

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