

The DGA of Qakbot.T

bin.re/blog/the-dga-of-qakbot/



Qakbot, Akbot or Qbot is an older banking trojan from 2009 that underwent multiple modifications — Symantec calls the current version Generation 10, Microsoft arrived at letter “U” . Since at least September 2013, Qakbot relies on a domain generation algorithm (DGA) for C&C communication. On January 11, the blog malware-traffic-analysis.net showed such a DGA empowered Qakbot sample that was spread by the Rig Exploit Kit. Others have reversed the algorithm already, but I could not find any public documentation or implementation of the algorithm online, and therefore publish my notes here. I only reversed one sample and did not spend much time finding other versions of the DGA, so please interpret my results with caution.

The DGA in Qakbot is interesting for multiple reasons:

- Qakbot uses the Mersenne Twister (MT) as pseudorandom number generator. This not surprising, as the bot is written in Microsoft Visual C++ 5.0 where the MT is the default pseudo random number generator. Still, to my knowledge, it is the only DGA that uses a MT; Usually, DGAs are based on linear congruential generators (LCG) or hash functions like MD5.
- Qakbot tries to detect packet capture tools. If it finds one, it does not abort like many other malware would, but instead generates *decoy domains* to fool researchers. On the one hand, this is innocent-looking to a researcher compared to staying silent. On the other hand, the operators of Qbot could register decoy domains to track labs that leak DNS queries.
- Qakbot uses low level Windows sockets for it's network traffic. For example, instead of using `gethostbyname` or `DNSQuery` to resolve domains, it will craft the DNS packet manually and send it with `ws2_32.send`. This bypasses hooks on the common DNS APIs.

Reverse Engineering

I reversed this sample from December 23, 2015:

MD5

1e135d7e024f2fb57182ae3313acae6d

SHA-256

be9625921253dca2929c849d3ea04fa9d406113bda9459af2c79487e7afdac88

upload date

2015-12-23 20:51:54

malwr link

[link](#)

The sample unpacks to [this executable](#). The executable decrypts and loads this [Qakbot dll](#). Microsoft detects all three stages as Qakbot.T, which is the second latest version of Qakbot from around July 2014.

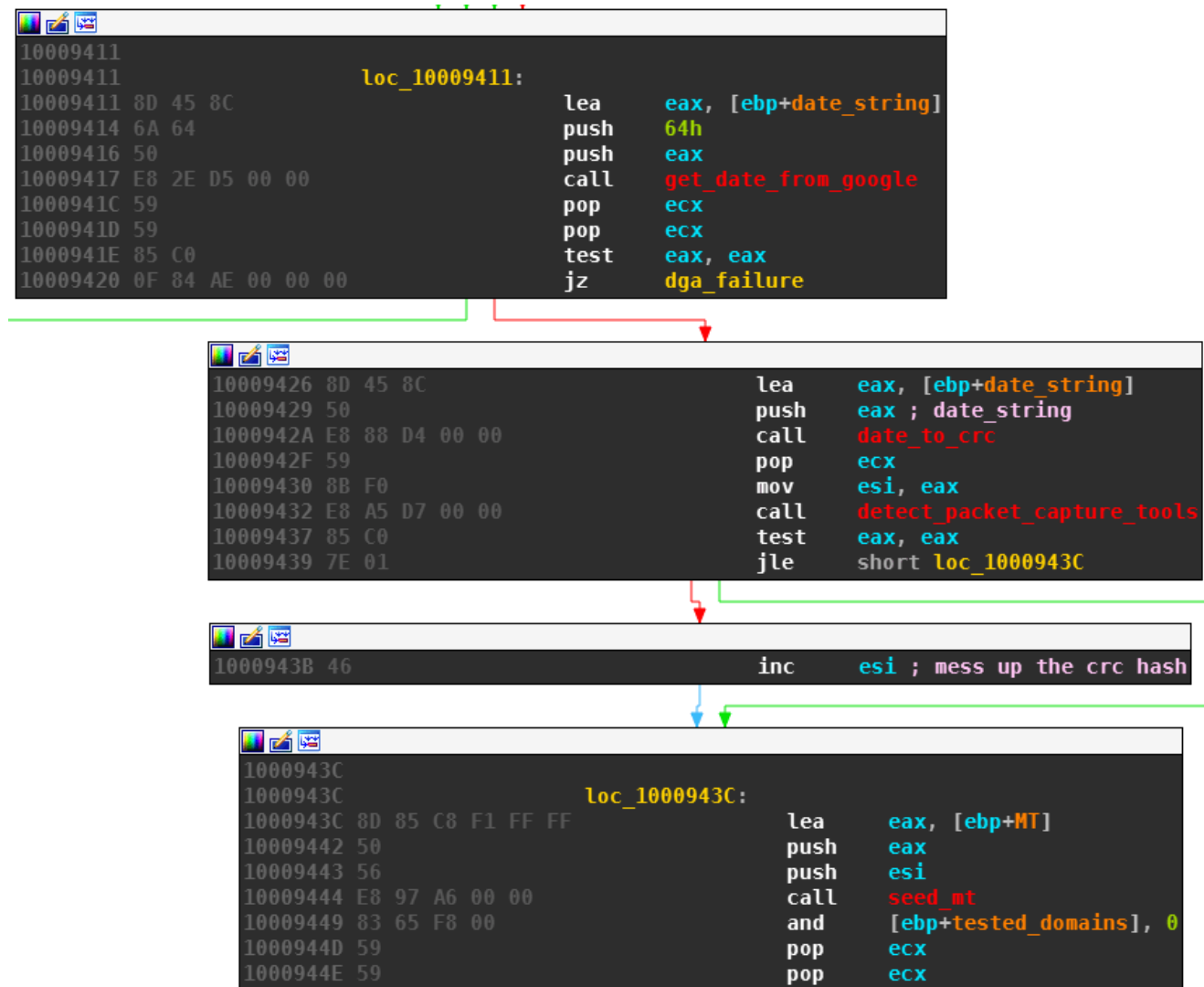
Seeding

The seed to initialize the Mersenne Twister is calculated in four steps:

1. The current date is determined by making an HTTP request to one of three popular websites (offset `10009417` in the next graphic).
2. The date string is reformatted into a different string, which also includes a hard-coded seed value (0 or 1).
3. The CRC32 checksum of the resulting string is calculated (the two last steps are done in `date_to_crc`, called at `1000942A`).

- Qakbot tries to detect packet capture software. If it does, it increments the CRC sum by one.

The CRC sum then initializes the Mersenne Twister (call at 10009444):



Step 1: Current Date

The date is determined by making an HTTP GET request to one of the following websites:

- google.com
- microsoft.com
- cnn.com

Qakbot starts with google.com and only tries the other two options if Google is down. Qbot uses low level sockets for networking, which means it manually has to forge the requests. For example, this is the data it sends to google.com:

Address	ASCII dump
02773910	GET / HTTP/1.1..Accept: /*.*.Acc
02773930	ept-Language: en-us..User-Agent:
02773950	Mozilla/5.0 (Windows NT 6.1; WO
02773970	W64; Trident/7.0; rv:11.0) like
02773990	Gecko..Accept-Encoding: gzip, de
027739B0	flate..Host: google.com.....
027739D0	

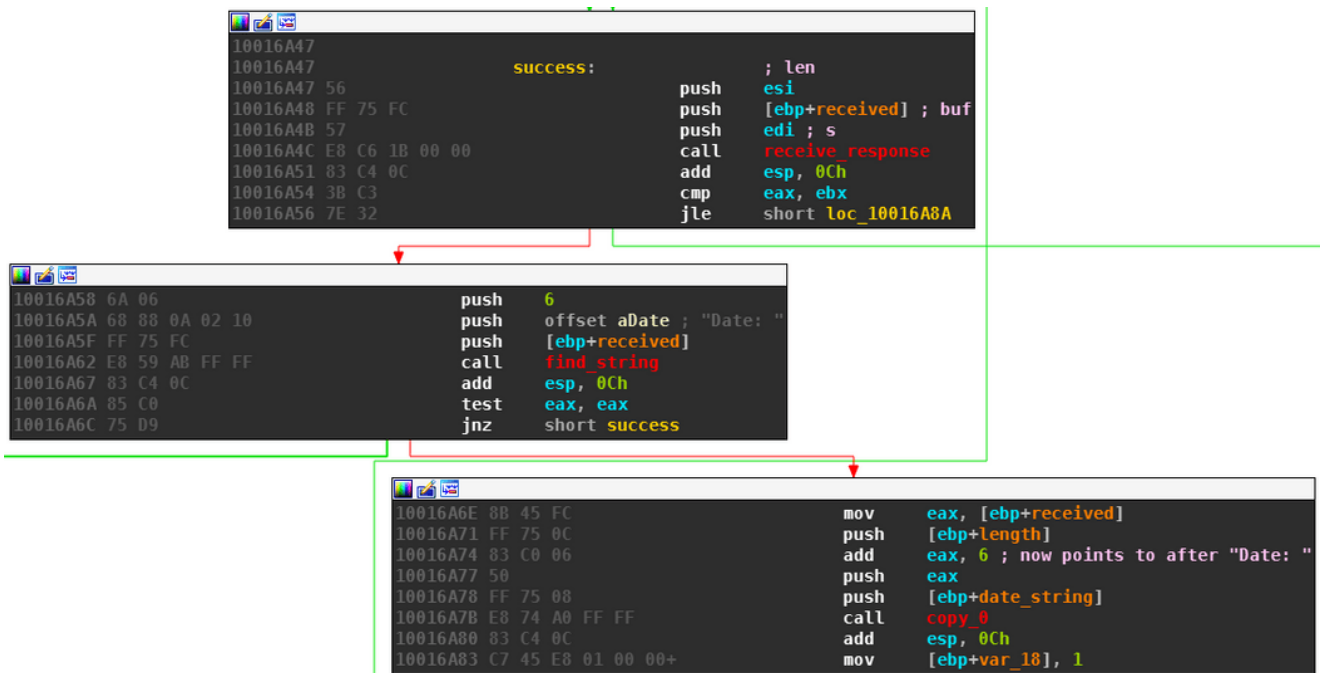
The request data is built with `sprintf`, and then sent using sockets:

```

10016A03 8B 45 EC          mov     eax, [ebp+domains]
10016A06 8B 4D F8          mov     ecx, [ebp+index]
10016A09 FF 34 88          push   dword ptr [eax+ecx*4]
10016A0C FF 75 E0          push   dword ptr [ebp+var_20] ; char
10016A0F FF 35 10 9D 03 10 push   request_header ; int
10016A15 68 FF FF 00 00    push   0FFFFFFh ; int
10016A1A FF 75 F4          push   [ebp+http_get_request_string] ; lpString
10016A1D E8 50 A0 FF FF    call   sprintf
10016A22 83 C4 14          add     esp, 14h
10016A25 FF 75 F4          push   [ebp+http_get_request_string] ; lpString
10016A28 FF 15 A0 C0 01 10 call   ds:strlenA
10016A2E 50              push   eax ; data_length
10016A2F FF 75 F4          push   [ebp+http_get_request_string] ; data
10016A32 57              push   edi ; socket
10016A33 E8 A7 1B 00 00    call   send_data
10016A38 83 C4 0C          add     esp, 0Ch
10016A3B 85 C0            test   eax, eax
10016A3D 79 08            jns    short success

```

The response is read until the HTTP header “Date: “ is found. Qbot cuts the first 6 letters, which correspond to “Date: “, and returns the resulting date string. For example, “Thu, 21 Jan 2016 23:31:32 GMT”:



Step 2: Formatting the Date and Hard-Coded Magic Value

The date string is split at the space character into an array of string pointers, for example: ["Thu,", "21", "Jan", "2016", "23:31:32", "GMT"]. Only the day ("21"), month ("Jan") and year ("2016") are used. These values are first transformed as follows:

- The *day* is converted to an integer, which is then mapped to 0, if the day was 1-10; mapped to 1 if the day was 11-20; and 2 otherwise. In the example above, the value would become 2.
- The *month* is converted to lowercase, i.e., "Jan" becomes "jan".
- The *year* is taken as is.

The resulting three values, plus a fourth hard-coded integer value, are then formatted according to:

```
%u.%s.%s.%08x
```

```

10016867 6A 01      push    1
10016869 FF 75 10     push    [ebp+year]
1001686C FF 75 0C     push    [ebp+month]
1001686F 50             push    eax ; char
10016870 FF 75 FC     push    [ebp+fmt] ; int
10016873 8D 45 BC     lea    eax, [ebp+resulting_string]
10016876 6A 40       push    40h ; int
10016878 50             push    eax ; lpString
10016879 E8 F4 A1 FF FF  call    sprintf

```

There are only two known possible magic values: 0 and 1. For example, for the magic value 1 the seed string on January 1, 2016 is:

```
1.jan.2016.00000001
```

Step 3: CRC-32

The string is turned into a 32bit value by calculating the CRC checksum, so "1.jan.2016.00000001" becomes 0xC758FFB8.

Step 4: Packet Capture Detection

Qakbot has a hardcoded list of executable names that are indicative of lab environments:

Address	ASCII dump
0265FE20	tcpdump.exe;windump.exe;ethereal.exe;wireshark.exe;ettercap.exe;
0265FE60	rtsniff.exe;packetcapture.exe;capturenet.exe;wireshark.exe.0-^0
0265FEA0	56.....'ow>gr..it.0-^0'ow>wr.#2.^0-^0&ow?wr.0install_time...
0265FEE0	!ow8vr..14.23.40-21/01/2016.....'ow>gr..itstmb.0&ow?wr..14533826

The tools are:

- tcpdump.exe
- windump.exe
- ethereal.exe
- wireshark.exe

- ettercap.exe
- rtsniff.exe
- packetcapture.exe
- capturenet.exe
- wireshark.exe

If Qbot detects any of those executables running, or if it finds the WinPCap Library `wpcap.dll` installed, it will increase the CRC sum by one. The CRC is used to initialize the Mersenne Twister, and the small increment is enough to lead to completely different random numbers.

The way the day string is transformed leads to two periods of 10 days at the start of the month, and a period of 8 to 11 days at the end of the month. During those periods the domains won't change.

Maximum Number of Domains

Qbot generates the domains in batches. The second arguments determines how many domains to generate at once:

```

1000944F
1000944F          loc_1000944F:
1000944F 6A 05          push     5
10009451 58            pop      eax
10009452 6A 01          push     1
10009454 50            push    eax
10009455 89 45 F4      mov     [ebp+nr_domains], eax
10009458 8D 85 C8 F1 FF FF  lea    eax, [ebp+MT]
1000945E 50            push    eax
1000945F E8 6D D6 00 00  call   generate_domains
10009464 83 C4 0C      add     esp, 0Ch
10009467 89 45 FC      mov     [ebp+list_of_domains], eax
1000946A 85 C0        test    eax, eax
1000946C 74 66        jz     short dga_failure

```

After the batch of domains is used up without success, Qbot loops back to generate additional domains, up to a total of **5000** domains:

```

100094C1 83 45 F8 05  add     [ebp+tested_domains], 5
100094C5 81 7D F8 88 13 00+  cmp    [ebp+tested_domains], 5000
100094CC 59            pop     ecx
100094CD 59            pop     ecx
100094CE 0F 82 7B FF FF FF  jb     loc_1000944F

```

Batches of Domain

The routine to generate the algorithmically generated domains first decrypts and splits the list of top level domains:

```

10016ADD 8D 45 F8      lea    eax, [ebp+nr_of_tlds_]
10016AE0 50                push   eax ; pNrOfElements
10016AE1 6A 01            push   1 ; flag
10016AE3 6A 3B            push   ';' ; separator
10016AE5 FF 35 20 9B 03 10  push   tlds ; string
10016AEB E8 BD CE FF FF    call   split_string

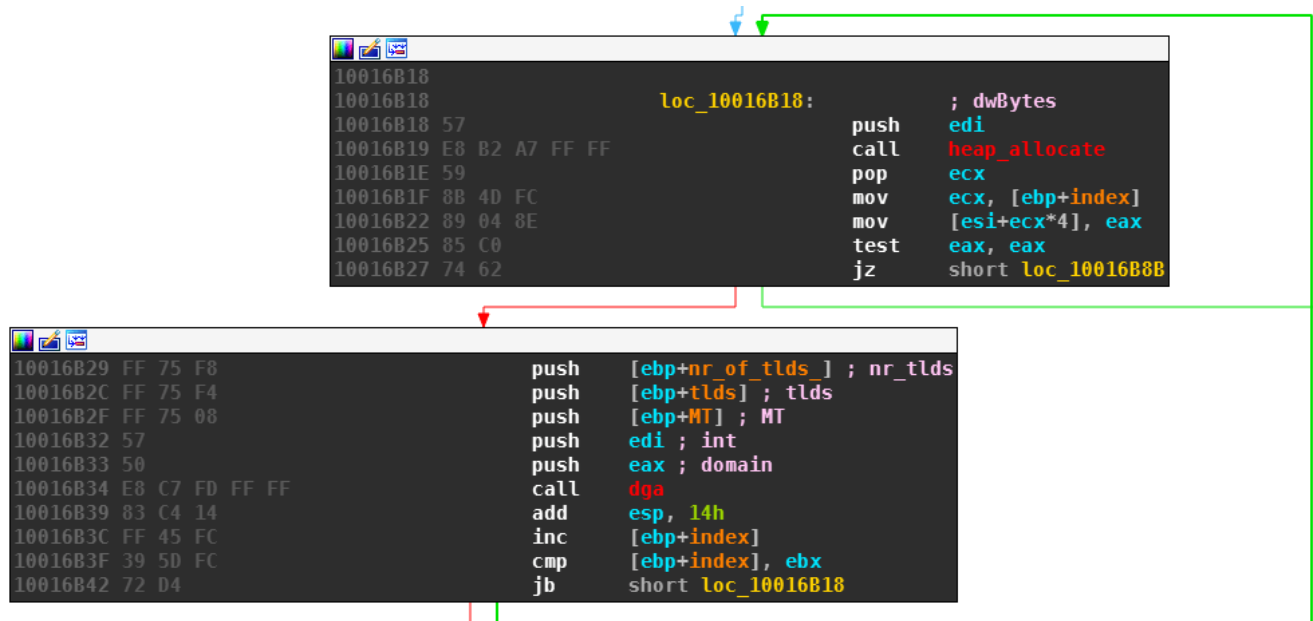
```

com, net, org, info, biz, org

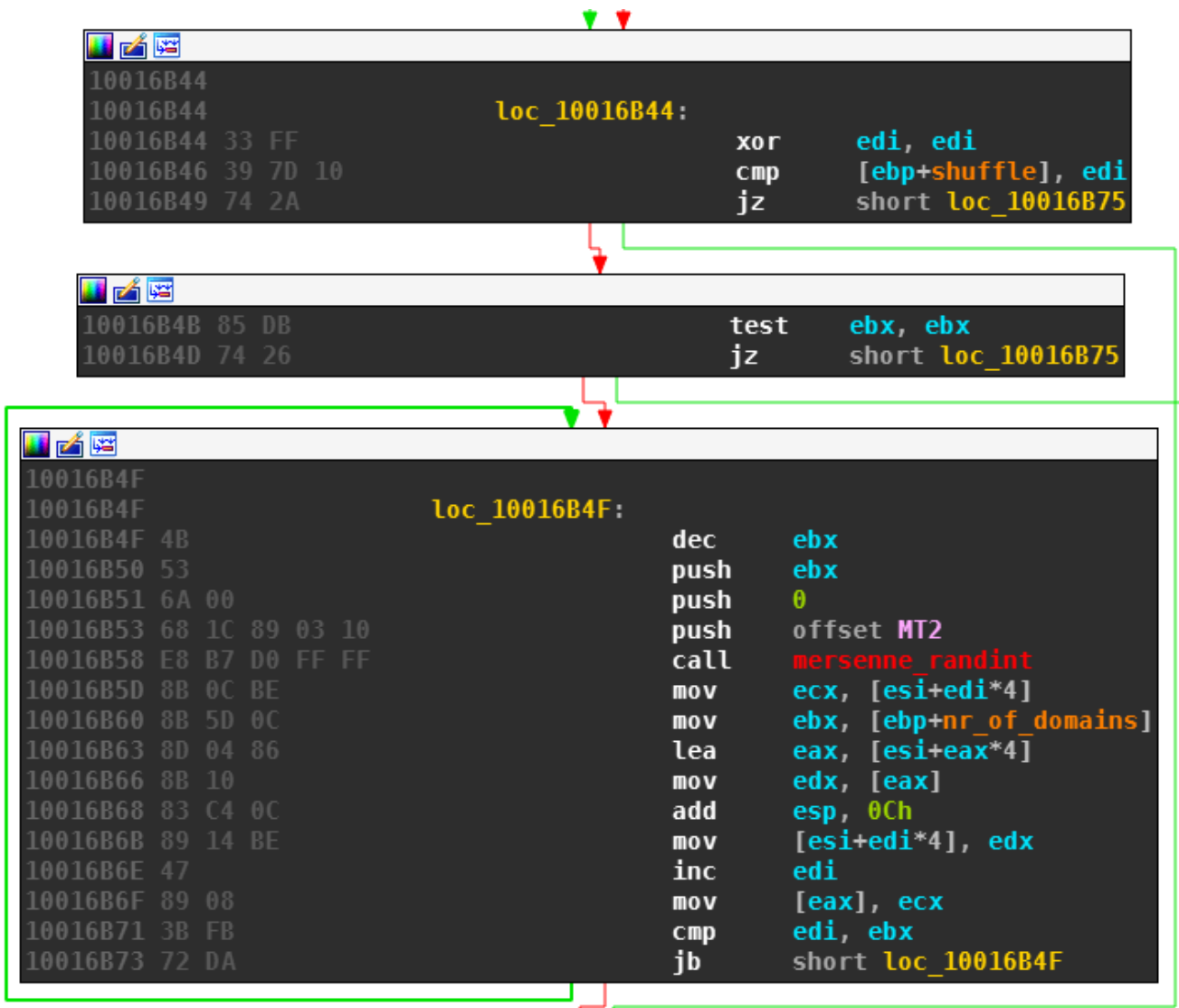
For my samples the domains are .com, .net, .org, .info, .biz and .org (a second time):

Address	Hex dump	ASCII
025E2BDC	63 6F 6D 3B 6E 65 74 3B 6F 72 67 3B 69 6E 66 6F	com;net;org;info
025E2BEC	3B 62 69 7A 3B 6F 72 67 00 6E 61 74 74 75 6E 00	;biz;org.nattun.
025E2BFC	73 69 74 65 61 64 76 69 73 6F 72 2E 63 6F 6D 3B	siteadvisor.com;
025E2C00	21 52 23 31 20 53 2F 21 34 20 21 20 33 2F 20 2F

Qakbot then generate five domains by calling the dga routine (shown later).



The five domains are then shuffled:



or in pseudo code:

```

n = domains.length
for i = 1 to n
    swap domains[i] with domains[Random(1,n)]

```

This randomizes the sequence, although not uniformly (see exercise 5.3-3 on page 129 of [Introduction to Algorithms, 3rd Edition](#)).

The DGA

The `dga` routine takes five arguments:

1. OUT: pointer to the domain
2. IN: (unused) an integer (256)
3. IN: the Mersenne twister.
4. IN: the array of top level domains
5. IN: the length of the top level array

The next image shows the disassembly:

```
10016900
10016900
10016900      ; Attributes: bp-based frame
10016900
10016900      ; int __cdecl dga(LPSTR domain, int, int MT, int tlds, int nr_tlds)
10016900      dga          proc near
10016900
10016900      domain      = dword ptr  8
10016900      MT          = dword ptr  10h
10016900      tlds       = dword ptr  14h
10016900      nr_tlds    = dword ptr  18h
10016900
10016900      push      ebp
10016901      mov       ebp, esp
10016903      mov       eax, [ebp+nr_tlds]
10016906      push     ebx
10016907      push     esi
10016908      push     edi
10016909      dec      eax
1001690A      push     eax
1001690B      push     0
1001690D      push     [ebp+MT]
10016910      call     mersenne_randint
10016915      push     [ebp+MT]
10016918      mov      edi, [ebp+domain]
1001691B      push     25
1001691D      push     8
1001691F      push     edi
10016920      mov      ebx, eax
10016922      call     generate_random_string
10016927      mov      esi, ds:lstrcatA
1001692D      add      esp, 1Ch
10016930      push     offset a__1 ; "."
10016935      push     edi ; lpString1
10016936      mov      byte ptr [eax+edi], 0
1001693A      call     esi ; lstrcatA
1001693C      mov      eax, [ebp+tlds]
1001693F      push     dword ptr [eax+ebx*4] ; lpString2
10016942      push     edi ; lpString1
10016943      call     esi ; lstrcatA
10016945      pop      edi
10016946      pop      esi
10016947      pop      ebx
10016948      pop      ebp
10016949      retn
10016949      dga          endp
10016949
```

The routine calls `generate_random_string`, which takes the minimum and maximum length as input, to determine the second level domain. The `dga` routine then appends a random top level domain. The routine `generate_random_string` disassembles to:

```

100136E4          generate_random_string proc near
100136E4
100136E4          alphabet_copy = byte ptr -1Ch
100136E4          dst      = dword ptr  8
100136E4          lower_length = dword ptr  0Ch
100136E4          upper_length = dword ptr 10h
100136E4          MT      = dword ptr 14h
100136E4
100136E4 55             push    ebp
100136E5 8B EC         mov     ebp, esp
100136E7 83 EC 1C      sub     esp, 1Ch
100136EA 53           push    ebx
100136EB 56           push    esi
100136EC 57           push    edi
100136ED 6A 06        push    6
100136EF 59           pop     ecx
100136F0 FF 75 10     push    [ebp+upper_length]
100136F3 BE 60 08 02 10 mov     esi, offset aAbcdefghijklmn ; "abcdefghijklmnopqrstu
100136F8 FF 75 0C     push    [ebp+lower_length]
100136FB 8D 7D E4     lea    edi, [ebp+alphabet_copy]
100136FE FF 75 14     push    [ebp+MT]
10013701 F3 A5        rep movsd
10013703 66 A5        movsw
10013705 A4          movsb
10013706 E8 09 05 00 00 call   mersenne_randint
1001370B 8B 7D 08     mov     edi, [ebp+dst]
1001370E 8B D8       mov     ebx, eax
10013710 83 C4 0C     add     esp, 0Ch
10013713 33 F6       xor     esi, esi
10013715 85 DB       test    ebx, ebx
10013717 74 25       jz     short loc_1001373E

```

```

10013719
10013719          loc_10013719:
10013719 8D 45 E4     lea    eax, [ebp+alphabet_copy]
1001371C 50           push   eax ; lpString
1001371D FF 15 A0 C0 01 10 call   ds:strlenA
10013723 48           dec    eax
10013724 50           push   eax
10013725 6A 00        push   0
10013727 FF 75 14     push    [ebp+MT]
1001372A E8 E5 04 00 00 call   mersenne_randint
1001372F 8A 44 05 E4     mov    al, [ebp+eax+alphabet_copy]
10013733 83 C4 0C     add     esp, 0Ch
10013736 88 04 3E     mov    [esi+edi], al
10013739 46           inc    esi
1001373A 3B F3       cmp    esi, ebx
1001373C 72 DB       jb     short loc_10013719

```

```

1001373E
1001373E          loc_1001373E:
1001373E C6 04 3E 00     mov    byte ptr [esi+edi], 0
10013742 5F           pop    edi
10013743 5E           pop    esi
10013744 8B C3       mov    eax, ebx
10013746 5B           pop    ebx
10013747 C9          leave
10013748 C3          retn
10013748          generate_random_string endp
10013748

```

The routine first picks a length by using the Mersenne-Twister. Then it calls the Mersenne-Twister for the determine length to pick letters between a and y. The letter z is not included due to the same modular arithmetic bug that many other DGAs share (for example: [Necurs](#), [Ramnit](#), [Ranbyus](#), [Tinba](#), [Geodo/Emotet](#), [Cryptolocker](#), or [Corebot](#)).

Further details of the DGA can be seen from the reimplementaion of the DGA shown next.

Reimplementation

The following Python code generates the domains for any given date and seed value:

```

import binascii
from datetime import datetime
from ctypes import c_uint
import argparse

def date_to_seed(date, seed):
    dx = (date.day-1) // 10
    data = "{}.{}.{}.{:08x}".format(
        dx if dx <= 2 else 2,
        date.strftime("%b").lower(),
        date.year,
        seed)
    crc = c_uint(binascii.crc32(data.encode('ascii')))
    return crc

def _int32(x):
    return int(0xFFFFFFFF & x)

class MT19937:

    def __init__(self, seed):
        # Initialize the index to 0
        self.index = 624
        self.mt = [0] * 624
        self.mt[0] = seed # Initialize the initial state to the seed
        for i in range(1, 624):
            self.mt[i] = _int32(
                1812433253 * (self.mt[i - 1] ^ self.mt[i - 1] >> 30) + i)

    def extract_number(self):
        if self.index >= 624:
            self.twist()

        y = self.mt[self.index]
        y = y ^ y >> 11
        y = y ^ y << 7 & 2636928640
        y = y ^ y << 15 & 4022730752
        y = y ^ y >> 18

        self.index = self.index + 1
        return _int32(y)

    def twist(self):
        for i in range(0, 624):
            y = _int32((self.mt[i] & 0x80000000) +
                (self.mt[(i + 1) % 624] & 0x7fffffff))
            self.mt[i] = self.mt[(i + 397) % 624] ^ y >> 1

            if y % 2 != 0:
                self.mt[i] = self.mt[i] ^ 0x9908b0df
        self.index = 0

```

```

def rand_int(self, lower, upper):
    r = self.extract_number()
    r &= 0xFFFFFFFF
    t = lower + float(r) / (2**28)*(upper - lower + 1)
    t = int(t)
    return t

def dga(date, tlds, nr_domains=5, sandbox=False, seed=0):
    seed = date_to_seed(date, seed).value + sandbox
    mt = MT19937(seed)

    for i in range(nr_domains):
        tld_nr = mt.rand_int(0, len(tlds) - 1)
        length = mt.rand_int(8, 25)
        domain = ""
        for l in range(length):
            domain += chr(mt.rand_int(0, 25) + ord('a'))
        domain += "." + tlds[tld_nr]
        print(domain)

if __name__ == "__main__":
    parser = argparse.ArgumentParser()
    parser.add_argument("-d", "--date",
                        help="date for which to generate domains")
    parser.add_argument("-s", "--sandbox",
                        help="domains when sandbox is detected", action="store_true")
    parser.add_argument("-n", "--nr",
                        help="nr of domains", type=int, default=5000)
    parser.add_argument("-m", "--seed",
                        help="seed", type=int, choices={0,1}, default=0)
    args = parser.parse_args()

    if args.date:
        d = datetime.strptime(args.date, "%Y-%m-%d")
    else:
        d = datetime.now()

    tlds = ["com", "net", "org", "info", "biz", "org"]
    dga(d, tlds, args.nr, args.sandbox, args.seed)

```

You also find the code on [GitHub](#).

Samples

There are two different hard-coded seeds, 0 and 1. The seed 1 is much rarer. In fact, I only found the one sample analyzed in this blog post. Seed 0, on the other hand, is very common with hundreds of sample.

Seed 1

SHA-256**Date**

be9625921253dca2929c849d3ea04fa9d406113bda9459af2c79487e7afdac88 2015-12-23
12:00:00

Seed 0

SHA-256**Date**

5d815068ed588b4b7c0ee34873548da49e4fc91aad0ceab9a2b9872670a8744d 2014-05-15
16:42:45

652a50c609acf82f10274cb917b11ec528f75154ae149203296e648948412b38 2014-05-17
23:38:21

49301bf209dc73d1c10fd5884fba33f557c9062a9285d779eaa5e81e665ca05f 2014-05-20
07:40:02

aaa45dd6f88472e50dbed9ca5fdbedffb12a81b0501613f40a1a580153d18ea8 2014-05-20
09:12:34

ae0b1c5b7967f8d649bd7e96de55253e1cbdb07baf4b65bd11e547301e1384f1 2014-05-21
13:19:44

fd38f8da23753a91f020398cff2dce264396c67e962c08b10025bc7db5d971a7 2014-05-22
07:17:25

10c744789ea2ca1f676ca5ecbff7574f9102525ba106e8598dddbe952dffe803 2014-05-29
15:58:28

e4154575c1ff28256408be805c9f3b05ed777691476a9f1d01206769a164ce86 2014-05-31
04:04:38

dd9128c3da483db4b5f0766c3ed1c18dd2bbe5c42b5cd77cf68a8f2ac6e6b7fc 2014-06-01
16:06:17

5843da19f61b5d438db50ae17792090c5887c04986351ca660c364f8287d744f 2014-06-03
00:08:30

SHA-256	Date
116a557e355f10185ea4a035d97bd94d8823ccbca9237273f71fbae3fcfe672a	2014-06-04 07:27:36
2f84adbef9adeaa7f9a46928592ca558cc82e0fdc9ee19779dfb2668a2d120a7	2014-06-05 13:05:16
d53d7032bb727dfb6bd63c66715e71a7ce0c462d36682c7a3eeaebf58e490d20	2014-06-06 18:48:43
d1530f8d244893d78d2ca75ea3be8dfae2d4711b7d671bfa142fb8e334a86ca3	2014-06-09 13:24:55
2f31f1bce7502d226735c90db3bb9438a238c3c85db6e43cc2342578a0af0489	2014-06-09 20:16:28
2ce602dccee44ab5598a2352d244f59bb1819d4d565d575cf25c6529e702f6bb	2014-06-10 15:53:57
cfc68a5d0e2999fddbcffc18d46eaec88f53361cfc5ced629099d61822941aea	2014-06-10 20:40:56
2bf98f3b39644bafd1229cefd8869547271027ea9a5aa1deef118155718af8b9	2014-06-13 07:11:49
7220cf63489009c7e7a573d387bd1f9953d0a0743439c373175dba90227949a7	2014-06-20 14:54:25
8a081bfc6637e08da73eb956e40f1a591e7281b3beeabb49db3b6d95f641985e	2014-06-21 00:54:59
9daa0a03dc1313afa810249de3072f471e095bcdc0eca03437b66bf56aae34ad	2014-06-23 09:00:51
c79aa4266b4a4a1c6387347fab90aa493d700ec56f042e8c58aaf27725ac46f2	2014-06-23 20:16:18

SHA-256	Date
3a8b94a282f81e6ca03b0e2d74c1b54658ba7921f296c8675ad53fe7407083ad	2014-06-24 00:01:18
dbcd62d9c30039f73cb6ccbc84a5e356533266b6dfd92100ae563f03a40076ad	2014-06-24 11:23:53
41b2f909d27007adb2ad3e0d2be9c222ed5ed1c3c550de89b7de9b609adeef3f	2014-06-26 15:42:25
4f57d29f99cacaeb3224f4aa081cb34b5338e478f60d72afc7e2748ae135784b	2014-07-01 13:08:01
4e9493bd58f47b741200d99c701126b3c3c2131032f3bcefeb97c52cd315bbd3	2014-07-02 19:22:42
ddef1b288b1f515b1843e264366aadd14697d0a9b05481c195afaae71914cbbc	2014-07-04 18:56:52
4eb5742af2f214c9bec0500c08a8136f72762d027da948cf94b3837cc624f7ba	2014-07-05 05:56:39
6fb0ae0acec0bbdf1a0fe32bf9df850927c8f1a7b08dff316759b86cf0c3490b	2014-07-07 13:31:39
83c77d898da3356bceac9a4c2cc10b364fe7bed3cfe426a6ff69b7351ad5e865	2014-07-08 18:27:08
bddd9fe6663f115d11606aa7451cefe89f10c7003488de7ccd2daee805eb4d76	2014-07-10 08:13:11
f85384bafd4065cda9dd703ec9e6753c770d8ef1eb31d729c959971ba87c5ef7	2014-07-15 15:19:34
cc3f4bb1731d0cde57adaac4054a6f8224b2e004794e5e9803f8a1d29fa8df10	2014-07-16 12:41:48

SHA-256	Date
668cb5bc660f0c1a40a57e4c13eab50865ad82e7782edd5e387f7a8a9cfd554c	2014-07-18 22:36:33
a0eab5a407ccc0db30965ed5af1a90d308d5db4e5ba53702b175dad260c1c817	2014-07-19 21:06:40
39f0b727634d479be6f52a4ec38293c70f52f4a1b73c874c24fd195dd2b1cd58	2014-07-20 01:07:15
9d2f3a3b88c05b629cbd09f41f82099677e97a14689965914999287fd1d136f9	2014-07-28 13:12:39
cb2a63e917a7056f64f0d04d9173c53d88171cbd42c690131d510e3cbc1d43d3	2014-08-01 13:48:18
92eb2a1f2306665ae7ac238d2e2f24f267dd7b996dc8f7cd04b21adb531887f6	2014-08-01 14:54:13
49224f2a90a225bca8b0e6da4375d7876a64f2b2c3b2011a36c63cfd9d376c0b	2014-08-14 11:48:07
9c2ffb4feecb57a27f85558043f22a8618e3916eb6b5c3f60f3443610881148	2014-08-25 15:39:23
ad33569a69b8fa85bd86cd7e16ce29f71b43580973608e86b1e124e6d44f3b08	2014-08-28 05:27:53
4b2dfccc4c028dc36eed090cd7738f825e012c4e84fa5a09ee11ec4168b148f3	2014-08-29 15:51:32
155ee1e7fba4d57497759e0d8aa518393c555361057bf0428b3ef8d37bab3f9b	2014-08-30 16:06:41
7c4560025ca3dcb8d5595fbb04a87880cf9a8fd56250a1fe2edb558637f1acdc	2014-09-16 06:06:44

SHA-256	Date
74ac2694226cab48a8295a4374aa0f3d5ef5060882210d8fd4202f4786943a8c	2014-09-18 09:45:56
9bd85d308b09a561f278afe1bda968784bf7d96f31c1f64f3e6e91ac1551e1d1	2014-09-19 23:35:19
0d42f249cae2837ab38a5cb79c253345df745c89947cb54a3ebe5b302cf8368c	2014-09-20 08:13:02
7ab508b49893b5f39149248756c4d30311f6edf3350661f65c86254e9cd7cd91	2014-09-25 13:44:54
dc65a1a9c2bb3752f84b29f5dd21b2a08c2b052b3af77ea22c203cb21818c166	2014-09-25 16:17:27
9395b37ed08c485e046a526bc1afaa2f701eb3299bc7bc5c0ed111ab6e6d7570	2014-09-27 05:07:31
e5d35c04738a9e44ee9a3d8a308b1a7200184b6d937256558a2bf823cc1cefd3	2014-09-29 19:45:46
d4040c8e2c9fb1fdea721d433fba10348bb57798c080e425a32641f6a0508c3e	2014-09-30 15:49:51
821ca00bf28b43e3872b3d7cf99ffbeb43836312e5ec714a9564f8de405d8938	2014-10-10 10:10:23
a4429871d35c18af61576ec45e997b9dc8997dd3a19e7e240cb8254e7d305561	2014-10-19 18:12:23
331a81a7a74997eb9523a3cd9cd0a2594a3396dfb323c45a22ab7b45bc944d9d	2014-11-07 15:52:35
41d93157341d5a94347b3fcc25c6f76ad063b171b88295da498f22f92b43520b	2014-11-11 19:42:51

SHA-256	Date
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6a8938c1675207327a3f2295d08ea1ac9b9e6fd7f28db14edfd4f385024e94c6	2014-11-17 18:41:41
3faaa21a246a4dd1e9bd6460f773b6ee05b91cfc4f5bb726d77e0d08dba10e01	2014-12-11 02:47:50
60f09ae4ffbc8e8d6a2452ed4787390abc2b87a2ef703ac10bbd5d27a17dbfa8	2014-12-19 17:39:52
59cb803f2405228dec211fdc26de35090a66761e87396dcb741eb9eac618ff80	2014-12-26 23:05:47
9f59dbef5138cf62d0335f5ba42982422ea41dae1d1987f22a28d76da131cf8f	2015-01-19 13:11:04
632d19231bf45d7d39510ccb9e17196dcbd5ffab49b081e4ec3a40929850dba3	2015-01-21 00:09:44
0e46284032f2ae0e71effa8c58ae56a97973825ec6ce9801a554f0592553b376	2015-01-22 05:40:43
a5f1f4372d53856b73d6565203ec673d05901f28ae2973cbcfacf4765c01d5c3	2015-01-26 16:36:54
b8151f9f0c4c7995ead75125ada1737d6179f0c8e7bb6e4d13ba445c53acab3d	2015-01-27 05:10:51
5e54c98f8e937577249fa964a65004642f40b72506b16006363ec03f1db9bcd5	2015-01-27 14:45:27

SHA-256	Date
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df326767cf56302c8ee48c781e1fc48126be9db512e65ada72574604fceb659a	2015-01-30 14:50:54
bdd5679436949c66ce1032f19cd937c9f458de0590a6b496fbc552f2bd2d096c	2015-01-31 12:45:12
a05e6ad11f6eabf79813553f3156afb5e13c507b9ffa0ef07d7861a6395bb45f	2015-02-05 05:49:56
d580f02bfd0d2a254d6cd6772a7945aad932cf4a7ba945709ebc0b8d9c1d1fd	2015-02-07 03:34:08
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9f3ee8719492483b762b455d8ac3883a287561054e8fe600c7913e5cebcc5d5a	2015-02-17 16:21:44
831ec44d888e14bd10ea7bf51b1c3c92b16315c7c85a1e8a94b369cf6b6a3cbe	2015-03-03 17:56:32
df0642ca49411a7c5eca4655e94dcc7cd97e944026cc1ca0594d86d94e016084	2015-03-08 21:31:22
7a9a5bec3ccab3b3ffaf25e2fb3ba107a69c77a08c2d580ace557e87653f0588	2015-03-12 21:43:44
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SHA-256	Date
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a821910126e4f439ac07e51eb505c26e33792d39be8f751705d77a307cd989e4	2015-03-19 12:04:25
7c37af6e28bea255796f5055942893dd6564145ca461133a078bbff949a93092	2015-03-21 01:54:37
e2dfcfed198b4e35c35f89c328683f0872b8aa9b97f2fd449517a99ceee9ab0e	2015-03-27 21:31:09
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0ae1db191b38045e1187eb63e40ef45e4790e3c4a6a093f8dea39684b4e53357	2015-03-30 13:01:09
e87657c24a52d2ea359d1cdd830b1019b2ded9302728982761ab7258beaf147f	2015-03-30 21:45:01
fb5fcf8a9b688fdbb8a982d1bf2adf2fb1d8cdd5b470bd0b22cbe8a7b09a132d	2015-03-31 05:31:18
76e2c4f17a3c2a94848b4491b86cf64611b4f4c9c5fb540ebcd57d0c96622d9e	2015-03-31 11:53:44
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7a6e634e5e7ca043a1ec0f2e2ec274d20940fb5b5a694e262b03938958ee9a55	2015-04-05 11:34:06
d37cb4b1dc22acd5c1f9dd3ede3db8464b32b34990144a7c29d7512626109d2a	2015-04-05 14:29:37
ca78d17109906a6865fdf206b234d9c0def3ff9fd33bf6791ad1974395eab0d7	2015-04-06 15:16:55
a24efc7f195b7fe80dbd350b67fd4a263ffbfd1abbd4e995bdc978694a57bae6	2015-04-06 22:13:39
aaa1edf9a899abc869b2ba5bea043e764bb63b7b44f3870466f8065601781ec4	2015-04-06 22:16:17
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1baa95959302256dc9d413ccf60b876e4deca42ec2688953e9d7741771c945d0	2015-04-08 02:04:32
a1f7134ef56af7ca4e897c87432d54ab3cd0ba959ade57ac1d73a579a0756d34	2015-04-09 13:53:02
2c7dfaa529285a7048200a3cb3dde1b422012f1beeadd731aab719db0e757fc3	2015-04-11 04:09:10
261e5c3ee802138bfaccb3673354a093d67981b210c3d5637127074888be19cb	2015-04-12 05:00:11
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SHA-256	Date
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939333b7f6b86567b9951c67f1686cb6424ab46070fb560aa5ee0e9fetc57ff4	2015-04-13 14:38:08
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2ff7bfb99e04d1795c66ca93f1428636ad61c791c2abf64d548ba10e789f2495	2015-04-14 07:31:30
8c287bd7beb9b9aca594609f25f1c3e889847ce1455c12f02784b8ab63154048	2015-04-14 07:34:08
136812e9afdbae82cd468fedfbb9700402a9d79f0f7c50c54b1e53a21f9710a2	2015-04-14 08:05:32
8ad9bbc82423734fdb610e4b9d5b4ee71c7a149973a0fae2b98fc38b9ecb6a8d	2015-04-16 04:18:33
90c5f9c52a4f0d2e85e04ed88881dab4cc85c414d3455bed8603f153e8904b7b	2015-04-17 13:47:45
893e61560756055a681389c5e0df74995e1c9364b71feb8cba3fc8ce7cc460a9	2015-04-18 23:34:15
a2d4b4d27d72de3487a44dc08b4f1d2d3cd26eb3ed1f953a110c71898994f72a	2015-04-19 21:59:13
4ea9c663f4c626fc9894a4256556b67fa909bf89663c70117f90c2eb7260b038	2015-04-20 12:04:41
5d3d9ad9afb73dc0397ebd48bfa4e456e61748f82a8a8137addb582a0361ae73	2015-04-20 14:42:22

SHA-256	Date
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6ae8c5c5911638d32ebfdff19457510688b1168baa513b37d8fd53c0b23545c7	2015-04-21 20:03:46
575473f4e90c11d7201f391cc29c654a5a44b640846808128453df4b175bf006	2015-04-21 20:09:02
5b48130a7bd82ac52863bea7c391eebebd281e31b65e1c59649949f09975206	2015-04-21 20:17:22
30445e974bb27cc5a46adb8318f14a92c1feec3064632e2867478e503dd077b7	2015-04-21 20:58:48
00661d19cb66c154abe01e54ecfb70d476f53af5f5ee49643daa68dd2be6be71	2015-04-21 21:04:22
67f186b7d713b4a792678d4eb5c09ace8f37fa70c3c0fb9998a98b2b3260a2fa	2015-04-21 21:23:38
5e162a06969408e46351037493841bff68223da39883f210ad2c25cf9f6c43b3	2015-04-21 21:58:03
5287da41bd8d47d8c96496b67d9e2d98e45e47f6a31a31b62189cca1d23ebd4a	2015-04-21 22:16:10
0c6184028e4d6d8b26218e4de00010bf5e60d8f53d854abcdd5a62ff6f62eb08	2015-04-21 22:22:35
be3d09d8e5e890cd5815346ded176a01c5ab63fc607554f87d7b03b39b3b9379	2015-04-21 22:44:27
17ff6e53efe399bf413d67eac52ec0238a0702eda9f15798492afdb1f3aaf535	2015-04-21 23:13:04

SHA-256	Date
3d593e983408a5db1264cf433e18cce192f615a5b591b50ebdddbd396706f505	2015-04-21 23:20:32
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1b23b6206b1d64bd724ed7fcf5775db0099a17f02c50bcdb11709776ecf5cd86	2015-04-22 00:12:33
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d0f691f0fa5b7e6b9554115035765b61f14f5661ead84593c0c970322a64317f	2015-04-22 00:55:15
09cb4da016ada345423cd34baba77b7eae3c267a64ecc1ead74bd381bc382295	2015-04-22 01:20:03
fb6994e8ffa8734e70180cc8eebda226d89f6bcfbe846a5528e8a12a94698cec	2015-04-22 01:34:47
8580826c88d992f38de076a448f87639c727786cb3cd36708da4f327f51dd50d	2015-04-22 01:37:57
e4d73174f428b4faaf77855526c4f377400d72844f2e3b20bb3a043546ad3fbe	2015-04-22 01:50:51
05f4fa90666031a7b045e53394dbc67bf15228df720a40b504fd9ca26e5e4111	2015-04-22 01:56:32
5e0ffe7fae46e30737d2d2387af5a712afa7ca820ae6af7d64d8c8c81dd745a8	2015-04-22 02:13:36
d5c4f8ce6274549442bf5c587fa75806e421a569489f7f0f5164702d7c08929e	2015-04-22 02:29:09

SHA-256	Date
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57d890d805aeaadcab3f9a0f45f9d33e481204012d5e78dde6c98fa9c4817b2d	2015-04-22 02:54:04
b0b5323568c6f87ebda9fbb889cc635c2f135217172225f3c3315d348210bcea	2015-04-22 03:20:18
0931d40fa1a39921fc08199def148b0fb4e0887dc78997ce170bcb99c836b667	2015-04-22 03:27:30
b43cf373b40189b8da8029bb372df3ffc32ec439edc7e1c82544ac4f0482c292	2015-04-22 03:27:48
a61674cb8bfc362770f0938cfad9f34a9e4a6de65ab40945d5749fc7724e0c7c	2015-04-22 03:30:22
6a5663ee0477048f791408cdd6df14a4a75a154a6b84821f70a07c22431c86ee	2015-04-22 03:33:26
3b576dc59960b75a32710d4f84d831034f190e205c9204a4fc1afb1b5b6ba69a	2015-04-22 03:37:22
474186375b34fe652898c76c51adc5724af362b94bd9be83794a91c2f5c8e41c	2015-04-22 03:58:59
ae7e1fa52c116599928311362f65f44b79992ef6b2f32a5cea485f2233847bef	2015-04-22 04:18:22
9ea1494e318ed16f69d12605997cc045cd49a9ed78a7ffb48ec1195eb8e6968f	2015-04-22 05:11:58

SHA-256	Date
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49c7f33002fe46ee9b888e4385a2688ecab363b6a2abcde91f8c0977a3ecbae9	2015-04-22 05:26:26
71682077ea2f3f0f0c45f4cd85d1f4d5f42f0a128fd210131376ea370c71ca33	2015-04-22 05:33:09
6e2a011fb324b3812aaa4ebf5a8e0f4c2226aa7bdd4008609eb8d95c4f6168b3	2015-04-22 05:36:47
ded32849f86675f7c6738a04c2fdd0ea97d80eddc95c52d4c0d510136bde778d	2015-04-22 05:42:56
ad41a48d875c04c8ad5766e7fdd1b932871a0f7141a3849d72c15c528aa739e6	2015-04-22 06:02:31
401c65ef4d2b542b578dc5a6afd5311d7604f06c2299619549b1082a1d774773	2015-04-22 07:05:40
2a84a6825f382f56c89638849aaeef9dff1e254ad57c6d34530f5ccff399ea91	2015-04-22 09:56:20
45b024abda0ad2e0203b5be478b90360dd458acb5097741db782cc41acd9d64a	2015-04-22 10:09:17
f2ff81e0a2f1bc15eb45018953e764dd60088a7c3cc656e429cdad36f1dd46e9	2015-04-22 16:54:08
082e6d138a39d94d2b5b793e381ad355551a28a8aaba32fc7dac9c0b1c655ca	2015-04-22 16:55:18
c184bed7ab422d23809cd52b6c4404ab1a4a6af68ec00fb0905b70419b678913	2015-04-22 17:10:49

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6e36b5998dc79da398a9a47f40b07b9de61f0792f9b583deaa8b8745c7c03da3	2015-04-22 17:16:51
7ef40ec0acf123f33276b84d4ea4f414e993da3b6cc798b8e3a5a6e299fb5e73	2015-04-22 17:24:08
a0aed54ee395e9bbb31870da876fb544dd9e75f5bf80545ac11a45ea5da0e27b	2015-04-22 17:55:40
5682e201c2f2b30309e70b7d7be6c3b5793b8c09698cac36bba9a29adcf2b105	2015-04-22 18:06:01
1a529331a831c0fa55b241899bee78ceafaa958a0bc9c4514e4e6fb33db23559	2015-04-22 18:20:04
428b22c92f29b334430c041c20efc4fbbbbb5e0e90e77d76adda2d7a3b6e7e39	2015-04-22 18:32:37
cb63263156a08ac50dd97a20a95c61800b56783564df1a1a3d1d736caa622c43	2015-04-22 18:50:03
39534de6de34ed8c400dfa40aa31cf9d51203c4422b076c9620e2281e2b6502a	2015-04-22 18:53:14
93dc94ccc3acec33bd80e7ed3c6a1e8e29178d6804467e365f6cc1a7492edfca	2015-04-22 18:55:47
693ebd9e15155063e41d6538cc060321b6b2744e686d93c3bec478607e1eb983	2015-04-22 20:33:05

SHA-256	Date
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e49cb51d14ac21bf595da82c9ad0476138c943a6f49d1a8c4c871056329d28a8	2015-04-22 23:53:51
f084328fa2bb40b1eddd6b1371c9eab8af2257cc7cb9298b801163eb26ca6ce1	2015-04-23 01:40:56
595febeccd37120ef0bb76fe4f344681be206984c6812c983cd614e491a56660	2015-04-23 03:15:10
e2246cdd1c699a9b40fc12d9f9896bf8c73e0aaf1d788cef41e0575a2850f736	2015-04-23 03:29:38
ce1c84ed34e413e8d082a5f587ce8f85945708114fd218e7e63d9861ac1f3229	2015-04-23 08:54:27
79ac91bab195d924ad03195b82040bc2be147ffe80f89244f2232702679c21f5	2015-04-23 08:58:24
c53221a010f53a61969b4f5fae0efc117bbc878936e573f08cbcfa30ea2c3404	2015-04-23 09:12:09
770554525ace845f8d6e6b795188afaff7c2b64e6d41ef57a923787ab1561086	2015-04-23 10:00:32
ec4bfcfd278709289f216fcb6959bd6f5c3521938cff003c5dac340472c7c1fd	2015-04-23 10:10:59
989e19d0813a86f18e82a27884088a11db63027f90e7817ceef7e60d7690bb8c	2015-04-23 23:31:12

SHA-256	Date
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caf006d44a91b120a9dae2604babad2c450564838dc772b5271517ac61a635cc	2015-04-24 01:10:13
e0275098c7efdedafb1559b324ce1ca622f61a3c5ee430050efc519300ad37a0	2015-04-24 02:07:57
8641b44534e1345fd51770101e919f0c69dbfe6b7a7af42f391e3f9a34078586	2015-04-24 02:08:45
e0f2ed071ce4b9f064a8c6d839b52d2499dd42909b5deffdbdd10606727f1df6	2015-04-24 09:45:05
30d833d4765bb7fbf2eda1cdebee7f192356f7a61c587a83af080a8573091366	2015-04-24 10:45:14
51576a4f9505cfe3522d96691f2c9ee4590fb9f56061905a86221a9e90d5f06c	2015-04-24 12:50:31
596f286a38a82a6243f2c14333b491b56eba5491010065e9b6bd7b71015908f0	2015-04-24 13:04:10
9aa1a4aed816ccb977d8aabae22cb86b4751338139c30256c301a6a9a90c98e3	2015-04-24 17:33:35
5179b35ad749673e166695bf66db71e3e522763ad20e2c3afd78d02d9ecc107d	2015-04-24 18:40:49
881a7e7404a4387188dbdb586cae050f52bc3ef88e5799f4861710a821b16e5e	2015-04-24 20:44:18
081b595ee263425261aeb9f8158ffaf97cda0872d070fed6c1b632a357b3a62b	2015-04-25 10:27:32

SHA-256	Date
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fdab7494ac11e4c6b7b3fba3fe645f78740b3e602d5092c2ba1f950c36d9136f	2015-04-26 04:10:52
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ec7ad97c40ba878b0ca315b509bbd3f77e9ee4568e7b194fedce4bc3609c91d	2015-04-29 03:48:30
84513ce079acca3bb7f89b24d32b5cb81b8f495e457708a4d85d4ad40397a9e2	2015-04-29 17:22:42
a654cefba18acc8e9422bd8d9826f2153fc48ab70d9d64eb91ee47dccc28e724	2015-04-29 17:36:57
5c145b93712b4798ab535d0d12aa872cdea5fe84614e652b7245bdf4b57e1cba	2015-04-29 23:40:47
8b056ccd59abc89a86c3bdb76525952dd197377bc2f5ecd4faff6b44e9456361	2015-04-30 07:18:06
0c48289133e3fc73f69535de108ba9378319a32b71438abb6d7f61fc929450aa	2015-04-30 15:55:12
fb696e936d65a81e11f024a7021a5b21b193241f5275422c237a4b87b8b7bb59	2015-05-01 17:38:17
49876878e6ece7dd5e71d10f32211c34cc947a95371e8315cf365563e068d7ba	2015-05-02 12:31:03
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SHA-256	Date
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ca0527039d8ae8343f73efb665ab562aed8c1f478acc710d0e20ef09055e121f	2015-05-06 17:42:08
295c94fb639a633fdf2414def1c96a61f1f23ed39b7e9f6d4810c32b12ae219d	2015-05-06 17:42:46
d33d814b7e436ccc6a85e27ae8be90208a6a7060ae225254800856d1e72bf704	2015-05-07 00:51:35
5475b241f2be1e1824a323a90b510149d6733c0a6d9ea24652b4b243ca261347	2015-05-07 15:58:47
7a284d2efce4e37ff3100afdbc5c7e61a29bb1cf6e96ebee254e40d5b3295957	2015-05-07 18:46:50
f56ac71d7c40d35557f28c686310251849c5caa827f87408bc39a07cd77dc1ee	2015-05-08 03:20:15
0ac64df541f1ad462d44ada790ca524d8e02263d9cafd7401ab6afddb130d8f6	2015-05-11 16:25:33
f4d8fccd22c332bd815e1b13efe5c2e0e3b04e6cefbbd6f221d32609cfe8f646	2015-05-11 22:19:17
bd5b2718b2517c18599e7a2afd5d955ad81d4f65af9826e0dcaa85627aa54373	2015-05-13 08:01:59
3dfedd054cfc003c2755051fb8392626f4ab1ef0e5c62ea8f34997ce5c19ae82	2015-05-14 01:47:05

SHA-256	Date
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e0a175e4a79eb18a29179b68735a41c14bfa70c3157e09d80aca11ab0daaeaf1	2015-05-16 07:01:27
cabc692bfbfd8fb6799a95821d27532bf2ccbb29d1d910defc22a2d3ae647184f	2015-05-16 22:35:38
9a238c95de1ba5bc414aa0fd45297bf79f02b1de03d93a65ad74e91e37eb9ae9	2015-05-17 10:07:51
bf170f3aa14fff30fe48b554bdfb89600d154514d77f8e30076b7c6aac91b81f	2015-05-18 05:36:19
1af7b4b0bb919dc6717dd425cf885285bca2da2b216990828dc77b87a0bc018a	2015-05-19 15:26:59
080b8752b213b0d2df81427ba702d251372da4d23f37c71e3ca2e1be2332f9f6	2015-05-20 03:42:00
b398818488910bb520ae8b1e9f3cd3f6c456c62f981177b11383066685064705	2015-05-20 06:06:58
caa7d5c2d890f3b3ea456723e743eeb8557a125240960409a5801294be1fbf99	2015-05-20 10:39:12
6360809d0b8d463cb4dc5588a9b838af25fd2318267628e170d5ac30d74002db	2015-05-20 15:25:33
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SHA-256	Date
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54b9585aca7d8c742d8f3bd132dc030971b1d7249ee4f5173e8c0de19e95426c	2015-05-26 13:31:38
d1cd02c96160df021db25ee8b5849baefafe5e2e1f3d9f29747e40c4c5cc1e98	2015-05-26 15:12:49
d163d9a6678601becdd4f8cb4df26a01e0960f2e7e4c336a6ca016a58862e458	2015-05-27 21:58:03
45bceb480ee54199c1cd241f4f4025b9e64a5f62010746227ecb25b18845d199	2015-05-28 09:10:38
d027f821ad57fdb5b3bac3ee30d22182062e3832d648fec7eeacbe24ac778932	2015-05-28 11:50:07
93de6694765995c5004d4a2a3c75b3957b12b73dd11693fff2d09bafe07829b9	2015-05-29 05:47:16
aae50ed1fdd105c38920371e2e3c447214bbced5a4a9a9ea1e916051a798ea6b	2015-05-29 15:18:10
e75ec5ada3080fa2dce6d067b1e46fbf0037666eb22e2b8079d047a9809ac0bf	2015-05-29 16:54:27
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SHA-256	Date
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cf7b1e43d327dd2589133ac8fda2a1009ffd58645d52d5b90bbb6b02aba6101d	2015-06-05 16:02:57
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701eb45a11c7600a738c4b2c2f52888c5fc58beea8fef5e968bbc40828bcb785	2015-06-05 22:07:23
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6d85032ad6afcb0284e4a0d4719cc8e24c57dba67ae062406522065dc3775ead	2015-06-07 13:20:25
e280d218f653f0d4651978b845eaa10cfb4334e5d0002057eab9d6c8f87a8f94	2015-06-09 13:16:02
1b1bdc0c075fbbc103bcba7d1890e4109a167f4da39c46b2d0a952e6cf4702a2	2015-06-10 15:07:40
abdcc4e4bab8b24fb7c17a0c2b37cae096fefff4494de990edb5d6bddcf63efe	2015-06-13 04:13:47
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SHA-256	Date
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feae84290bdd10c8ce0ba5f11adbd6ee0403aaef3a6a97da51cfc79b4d92039d	2015-06-16 20:29:02
cf6003715d5e9a096fbf10bcb37ec2f25d365d51da4989b0389ac1286252ec1c	2015-06-17 20:57:41
7c943a9122a919b7039e51a3766b6392a33b4fdf5132b1bb83e37ba2a3b1bdcd	2015-06-18 16:14:07
4a3f2e408596e11e4654e20e821885905cf61d47635378b1c28a55dd8e56b658	2015-06-19 13:41:23
1bd70c6b0ac1a8dccb49e65247545f8ea60bab6636ca236a85559a306b7820d6	2015-06-22 04:16:49
6fb8f099a71c1afe601ae6584d368664ae5a542237b1fc91ce62cdbc22bd7ac6	2015-06-23 11:17:50
61fabd06910317d7bc35df3eacde9d43e4151827a5c7af62d126aec4684194db	2015-06-24 23:07:52
245c034873a9599510d114812e24c4c700a47dc65b2a4d24289400cc6938c822	2015-06-26 15:13:13
d3c7baa7654097f13f66a7ba29b3bf7181e58f6a85c217b17babb2c05682f184	2015-06-28 01:11:20

SHA-256	Date
f7f31ab6e11f52a15f3cf6c2a61d3cfadf535128575e55825dbd0f8e005c283f	2015-06-28 15:55:04
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93a4f68d4a575e801bca7b17c7cfb0225679797aa0240817d8ca61761379d69d	2015-06-30 12:12:51
15756ea20f766353a6388233f29838b07e08492ade59aa8aea4aa58fd1549851	2015-07-01 16:44:56
f0598abf289746497e87c51032a95f2636c2e1311e9f50190cf471e94b1937d4	2015-07-01 16:53:12
87403d73883f0a580837d7292ba3687ef4a490de0e69a7bb3ef5d6316ee9047b	2015-07-02 01:21:13
e90dae6f8ec2dd982bbd3ca957b349cce77cc10a0f8c6e3d1ff683e7183a44dc	2015-07-05 07:22:26
c4643840ddb5488a4f064c1811d7b23c16538041ba1509d2d67dbe7adc43e9b3	2015-07-06 22:18:57
82351c7fc88bdef4d39d87cd6a318a06e4c63fa55a272fecce9d4268ede19767	2015-07-09 21:35:13
19d06a047b24449e816efe784f605aa8d86306439becc3e74961aa285489bb9a	2015-07-10 10:28:59
ab59e766c1754e98a83d41a2a752d33c3594a367ec6cc3751f8e6e5be94eb8d9	2015-07-10 21:07:42

SHA-256	Date
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9ca7bfa367b40aba9121288bcee301ff93edc89db4ceda6e963d934a8c3469f8	2015-07-15 03:34:58
52c934fd384a02b5ef90a89dea05693d4f349f35666a9c26773e93afff48371d	2015-07-15 19:52:24
6c67b8b2e3712668b7a2d5e55729485ebfe9632bc6ab3c330801c0c114f37cd0	2015-07-15 19:58:07
b4c2c994ba4345d5dc37f5298c51f721fb28847a741fb78274c710ed5116b98c	2015-07-17 15:50:25
e897971a34d508cd7c241ecab26a49138e4540fedbd5b6dc6b255d5a0af64045	2015-07-17 16:54:50
681fc1ed7eb78b595782c8b4fe629bf6a24dcc56a90a7d71a7ed61965a6b2fb5	2015-07-18 15:49:15
d4db484c7fdc87b301a2f572a6c9b98d008ec1205a731c1d559c8e844e527db2	2015-07-19 01:18:36
1aede5dd6260a25bff76875a92b8d5e2c9c0aeea0769e580daa6f57a3533d6b4	2015-07-21 17:01:07
16bc5bf07fbcf3c208758b49ae748e36d725f15d89a7aedc3d408deb13b5c451	2015-07-22 14:41:29

SHA-256	Date
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e62a8528969a89e1d8a5a8ef5ee4190b24dcaed604e5b3197846aedbd84423fe	2015-07-24 14:30:31
de123f30c7302a1932581a6a91b1c0058ac4fa0dd87bed08bfc9468ccd683efb	2015-07-24 21:27:18
bb2d4d8861dcf82a51861e8719e5c0d53ab7362cc56134bf724ddd0ed17e4dc4	2015-07-25 15:58:40
81bcbbd9d7bc3b649325b40e5262f7431a7717020b0dbdb1e9cbbcb966938b80	2015-07-26 04:40:58
abea8a05798cf61de41eb6351c6d5002ceea5e62446b066ebe0f0bddbab620a7	2015-07-29 13:59:27
9a24d3bdd722f9f060b1e112a3f13e7e45c8126ec65f62c51709cebde9b5d5e7	2015-07-29 14:07:47
b4e800336de661c7d102389812d07a49a52817cfe13d0337d5eff767589c6fa6	2015-07-30 16:39:26
236422857876fc7642e2c8c3b0812015dce26119e212d118550af5a68fdb9313	2015-07-30 16:43:28
7d7718249dff7ea03ae367ced7f50ab5ecf99558bb2c0229305ea3ee2b821cb1	2015-07-30 21:48:14

SHA-256	Date
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18ae1756de1510f5fa795f4d96961c2b466f43a6e378f8fd262bcaf7e67b5d6b	2015-08-04 15:18:26
e31bf349edef30ed510c067c7ab90f775fe2450b3e291f85f5c9511773f390b8	2015-08-06 08:43:41
5f716cb91aa9b0722afc6e96cc32a643a905308a296624db8fcf0773a8579df8	2015-08-07 02:13:57
9ea5655df078af9fd5f0a8288d7ca563ff9325ec71deceb6a2433693d86cd5e2	2015-08-07 17:33:46
e6d7d4cac56f197e9191c0a5c5c540576bf3bb8743ea34e0338df7c936b24966	2015-08-09 04:54:42
91a2d2f35cdf8f55315f5272d25f202a27623a9b91e897ca63bea4c08ff25a3a	2015-08-10 11:21:04
93e64322f023e51af0357241a03cbdf6974deb68fd8b5f45adc2417bfe19a2ff	2015-08-10 17:17:46
5330a2c98a216ff87733fe3377e5793298c747a83c617047f861a9da0ef559cc	2015-08-13 08:38:09
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09c629aced4640b7b06d8f880d8a506a86a56d9ea462b0039f4cfb79966f7e24	2015-08-13 09:16:32
ce802bdb01d6ea8d7aa169807ed21b5c9a4972af8173453c23bb7a49e96357c4	2015-08-13 09:26:32
9c947bc8a37d26f83249008f2e7dfe6128ece7d3e064ac3445b0f8c0fe523208	2015-08-13 09:28:28
213f7378f35d6d61b2d9a9ffe61fa1c06b00a4c90a49aca5c4e86273bd7b05b7	2015-08-13 09:52:09
f6c5c2bbad977ae6bbf94385129f90b000be1d060618f9e15dd823fd76985993	2015-08-13 09:56:31
e3eb924c7261ec109a70f3ae465d10ca0ced588519b63892ff917d80085ba709	2015-08-13 09:57:35
d3c24da311dd6296432a5ca59b91c1198d69e6b5fd3e728a20f9ff61427ddf16	2015-08-13 09:58:30
f8906c10a0f1d9a124325a3688b14ed3c7707e13d57d7b55dea00b9b43f518ea	2015-08-14 04:42:18

SHA-256	Date
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bacad53f8aea4249178e79f2aff1b64d50ada73d8d433e79203e94a5ab3d2555	2015-08-14 17:57:33
3c326154b51c94a91abaf4f84bd57e386afee9652b8c29450f7b791f63cdd810	2015-08-17 18:43:14
db366430745a8e214c1cc144398a20df7140fa1c2826278e9c7497d64bf26863	2015-08-17 19:34:06
eb14296db142e0a6e856dc3690062dd45b9922eb5b218fa9b28be1a276596b50	2015-08-19 10:04:07
ebfc9eddb6ae6e9b36591973a11360494e0279fca5f2d88057e78db7e75456b0	2015-08-20 09:27:56
a29e367e38a653a395f3d32027b6703636a1708fdb2eeceddb8daa565cbd4db	2015-08-20 15:51:37
54ff8f28cc2bb1550a8fd1056d0bfa8cc6aff9ad2f75becac5e6ba4d32bf16a4	2015-08-27 16:43:21
f10a1966bcce9f7547375ff9b67e8e849e0d2f78c37ce00a2e0ff2a64cf29908	2015-08-28 02:44:40
755303cb366d5e54c220d4a24ffc540626b6468a3890eb4b51d2d60ceb264e7c	2015-09-01 19:33:43
e6b5b309d165067985c230953d86c5a28432ea097482add729c753f27f488b06	2015-09-02 19:23:45
7b57134bbec76ade16699d307fb61e05b9f6026195350b50deacb87387b1b58d	2015-09-05 23:16:01

SHA-256	Date
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e8973c9d7ca8b67234a3a6cff8923bdcfd6f553d6e7ae902f1c53fd9685fecb5	2015-09-07 06:29:15
9fb723ac2f7451156af92730287435045b1db18222cb7400f1f62d2ebd22a008	2015-09-07 06:29:21
023d4964c74f4649fe82f0ef521614b530b5ebddd81311cf29d2b3152b4fd56b	2015-09-07 06:30:28
fd2d9822dc26f2a0e96d1e0196488df67f14910a0195e4fe7fb977e5e4dd60c8	2015-09-07 11:02:09
4eeaf4be756a6226172ae8bbfddf7a109902ece4b325869c1623df636211f38e	2015-09-08 18:03:52
3e128086d601f06f22348db17efa9fd9411e023b36578196b7f57eff5f658d55	2015-09-08 18:06:38
44269f287b5d57daa854bd481f9f4f4eed9d201326023a689915d32b36d25025	2015-09-08 18:09:53
d173bc2ad6a57e015ea39ed523874fddf83e127dbcfbbab271e62e5aca472e74	2015-09-08 18:10:40
5811028567def217c3654d2c3897e277144f98268b0a3aef290331bd7ecabcac	2015-09-08 18:10:56
74a4e5317f4bb723b4a3a9001c82cbacc80689a9a9cef4ce7afc348a76e93a97	2015-09-08 18:11:50
e2a13e0c4be62077ff9cfefef78fd2610ce8a4c4c19e5ab71abc019ddf65327a	2015-09-08 18:12:13

SHA-256	Date
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0445d8cabd1d177d1099f5d230ca5593a93e6e53a3bc7d49e7695a07b6e3ec57	2015-09-08 18:13:20
077bcedbe4344813d618970640b948db162dc183b17455d8664872b64c9c7fc4	2015-09-08 18:13:29
330ab15f208a5db92b5a4967b2de9ffe6dc5f1c38b0df82c548a3217e477cdf0	2015-09-08 18:14:48
138e3f4935d35db97d7973823a9d3ee9b12fae9aab11aac1f60f1e9020b6528c	2015-09-08 18:18:45
cbacbd4065f9af06d340d1cc977f3d7c9a4f2f7b2ec18647fd6eccf332aa4597	2015-09-08 18:21:25
e792aa1ea4a408ded47216037d52721dad9f60bee274d5d9b2a22e826a6420b5	2015-09-08 18:22:58
b459330cea09dfc6ad875568f04b55c5de56bdbd5298ca8a6626cdb8894aaac6	2015-09-08 18:24:55
727ea3d523121f1034b4d6a64bcb927a12e18fc9cf5def4957042260e51d078d	2015-09-08 18:26:18
aa336b8390127e3ee3eb56cf621015a1762507c1bb78258f265668e021f8272b	2015-09-08 18:26:52
de14517df88afc50da3ad0e6692d481075a12c59829a65a2c6f0d9da46a4e269	2015-09-08 18:30:05
fbf483a32bf51302d750205ab5ed2e2e09de821e3e96bcb7853ec77c0944bfdc	2015-09-08 18:30:16

SHA-256	Date
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4ed6c3dc8bc5e87b8762c059207f41f8064e2ab76330774dda27082f0b699bbd	2015-09-08 18:33:38
7dd7c984a132925efd628fc49199ea190b4c05d04c47880ca14c28341fab1f86	2015-09-08 18:36:44
d53eecf218ce035ed229701c3f74d59b71b72d9c1a2cd12dd5ac9ea381e61cba	2015-09-08 18:37:07
de2a1302c69f8907b6e65d5153371c281ecbbc8e283fd8322b2f663f1f4d3e31	2015-09-08 18:38:17
4d764adcbf15d0834522c31046a464843784eadae215d01ba09ee15fed94a11a	2015-09-08 18:39:22
66365ece809a9f4f54358c853ab4b17ceadf8487ea4c59e58600a2dae9fb11d2	2015-09-08 18:39:38
5ca6c65345a9ceea7f790073a1ad3b324d4916284851bc8e48174fa60d58b3b2	2015-09-08 18:40:00
9d66248af1b8d0a47aa9919b32b49cb4196557e9d2f15922619a3c74170bad91	2015-09-08 18:42:01
95c88901dc7d9beddc89f02fe8b4ad4fff30cf6367db789e4894068cd2eeef84	2015-09-08 18:42:03
21ab7897566c1a4278607d309c6fdf780cca70e5399de2c4adabcd4df115efff2	2015-09-08 18:42:56
232f84ab8672e885a4a4ed76b0a978c00e9c3be66baad3d4406fcb5808c4c1bf	2015-09-08 18:46:52

SHA-256	Date
7c5806cb9b278e6c73072df702badbfaaf2c82a368ec4debcfc167aab7cd2743	2015-09-08 18:46:53
54ccd769194ef3a4b3d4a6eb1dbe963e98aab5f354cb3910b7d8a8ad981d4557	2015-09-08 18:47:41
54f55fdd7cfc6123f1a1bc9a01e9cc4903f15370761d3a60efbce697758bad3	2015-09-08 18:50:53
3cf47304180efd91887bef17f9eb6787e0e48cab1b584a2f748e79a1de8e7304	2015-09-08 18:55:19
5c2f5b42624de26e041a35f3252fdf2f8b183ba84bc4831161b500bce07ba2a3	2015-09-08 18:55:30
fdb67a4e0cbf80a9534c2bcecd2e83b20a5359c364b3ed957be017f0fda5e1b6	2015-09-08 18:57:24
37998ac968de8ad4fc4a82c7421aa7fe57838584925c9ed86a8a6bc544e8064a	2015-09-08 18:57:59
45373e5d4f9bcd60a26f684046cf82e3ef6bee3335d6d0bd7ed2122a7adb509c	2015-09-08 18:59:43
883af577fdcd9d1398589ec374c6173dc55d37dba02aed132229dff951bc71a	2015-09-08 19:06:24
320ee9ed2169198a7546d311e3e23c175740fb11c5d38aeb12bf3475fb801b08	2015-09-08 19:09:42
ad70dd13d5fc0d73c4a377b8a51895675eee7a4f5b37f7fbcc2a9aaec1d6c30e	2015-09-08 19:11:57
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SHA-256	Date
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d3022bb434da4e69478a9ac84eb36cc9263702aa368f2417e7f34d4249e6568d	2015-09-08 19:17:01
72a838e7cfcde3e4eff8cf707304eebfe429439bf345025f5e3a6f56d199b1c6	2015-09-08 19:17:24
fd46f9d85987fcb4c89e16c95d70cbaf0c200bbd19742f6fec186455358c940f	2015-09-08 19:18:20
de1e5986f143e5d7cebb172953a93dbbef50ddf42a99b51084471aa8d74b9845	2015-09-08 19:22:06
aa6142165d43bf92a7a5e85c365d9cf72da58f22288fa21f4103d5ceb86ed68c	2015-09-08 19:23:07
f7ec2d3953cd9c31d5f953504ad7abd50bc08386d70f5c62854be912ccdaebbb	2015-09-08 19:23:51
3d7da83a4743bb18da78d588098c797fd9ce933f8d57f8ee8d7f7d115ed46e45	2015-09-08 19:28:32
72c00e2c782b351e458cd1fd558dec9e9ccacb9f6569551df455c574423d85e3	2015-09-08 19:28:46
33f6c06b6c55ec59fd83d925dd01489a0c4316c21ba59f5330716517900c3818	2015-09-08 19:29:13
95e915a54a7fccf0367e99206160a62660604facaefd198cf9267767d017fc4f	2015-09-08 19:31:52
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SHA-256	Date
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e66237b3ad8a40017c4f79834b1bd609a7cbdeebb1f50a3a0d848a54ed83b33c	2015-09-08 19:38:19
61ffed9932d035db71c1ed5055ed735c3e5d0c24446df4e689555e06c81276d3	2015-09-08 19:38:34
2e4747fb1e1e9dcdbeb175483c9bb4cae2a7163adbcff6c44b542f1f2fbdfbd4	2015-09-08 19:38:45
da8dadbfead1d8553d52d98ecfb04446e8ad5d78477ba50a38e8ea736ada2ac9	2015-09-08 19:41:29
019edccb0b0c3988c5a4e704c788a67f7ce8522ede8644da0aab9709b84929c	2015-09-08 19:41:35
b7b757cdbea162c1191eb37d58a95b8eac0fdbfc3edb3a0bd539801923c7f74a	2015-09-08 19:42:55
f275d5413612b02825bc1d34126babea5bfdadbe62627d2d163d691e6cfabacc	2015-09-08 19:47:00
9a940ac7759944758df36cc8b360e1919e2f5aaf2890f050f2eaf8ffdf789a6b	2015-09-08 19:49:16
7113aa5662405e7c0a161be668720017fa7d96c19fb44c9dcdef2cce93d86f56	2015-09-08 19:51:38
b57032c92cbcf469976940dcabc2557e12cc99e75cbcbaf718628cdcefe90d2f	2015-09-08 19:52:04

SHA-256	Date
56a165767fcc04d91f38eafb4793c80681cb2772af960b07e2013d032bd73160	2015-09-08 19:58:25
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592d20c7541d68c440d588a37acc07374bfc0d9c0666509a2a75c11af36d1126	2015-09-08 19:59:43
0cb0e692ee385ab4702e8c090db743b1054d34f345142967bda14d5b809d8d86	2015-09-08 19:59:57
2980eaf9cd8dfcb33fb14fae9c93f609e4c6fdc34ebc319f53ae56c7b5d6569a	2015-09-08 20:05:48
837c5cf285e6d12af08ee7b183a0de87f4a47efd725fc8d898c653abc2a5a80c	2015-09-08 20:05:54
10c449dcbc3df85456f4405aac1a095fe87a6ce5366b6471284f4ac7ac267c14	2015-09-08 20:06:50
7c2b24813ed7bc68eaa81ebab2c2c71f81d3da0edd059dfa47cb97f804ccc50f	2015-09-08 20:08:43
843fce353f249a5f2cfcd0c7502701d0724e49f53e5b82129f58fe993a275010	2015-09-08 20:10:25
1b9a141a62da459b6320382efcb0fb878b42f424e3d4fb72f0f1f84a092215e1	2015-09-08 20:11:00
4473e0edad9aa8bcdabf9a9f9dfe1490a102a58180ce777b070c9a64a31f7973	2015-09-08 20:17:55
cda68ce45a2be5fcf77008fa43b5640652910e1f1f7b51711b860080be29c808	2015-09-08 20:22:16

SHA-256	Date
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8a068e50dae1577f5d7691f12bff82299b559becd89443e5a2d6f43a63a18605	2015-09-08 20:35:19
f2ad46faa49f9c83514c29578aef0eed014596b7419a12829b00fdf2550d1e07	2015-09-08 20:36:07
4313a2d36344dae2322ef4bd973c25cba09a114abe716be06333287fdd1395c4	2015-09-08 20:36:47
54dfeba5df2ce4f4f75e4b311a05b42ce635f3363f4bac2a07cc90505dcc3a9a	2015-09-08 20:36:49
cc8768459810b4c2a55c12ffc87d546394ec242038052016196d99f7dd456a34	2015-09-08 20:40:12
868d4e29025e30d0fac5895237fb1301161353c33f2be6407cd1453099ff4dca	2015-09-08 20:41:56
16407e6d1b6af91dbbd40ad3cae89d56ff86328ed0ee232f82f5bee864ee3cdf	2015-09-09 00:16:02
0f9c3270a6c1f92034d1fd5300feaf6aa88da9da4c3ab4091189a9f8f00f71ca	2015-09-19 19:35:52
b318949ee3e400ebaf42a3f44524be274faf834cfb85896097b4ba8021ce426c	2015-09-19 19:42:57
354158f903c56cedc0d1631ef96810d2c66f4b8b53aece62e6f757f103d10fad	2015-09-26 01:28:22
f4e133b0a10f136984e1ed654af7dde902ff25e62f9a33b299d857348354649f	2015-09-26 04:23:16

SHA-256	Date
add2ad3f42a28dbaa247636f3e3ffad5b4f452676cccd6be41f305825ce26c45	2015-09-26 04:23:22
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b8c48dfa2b669f54e94a9a8e6e4ee35fa0ebac09c52f4dfec4ae6a6c7fca7421	2015-09-26 04:32:35
e44da1fb68c9bad236499fd37d9ae04a0e8963e3e5aebe36fd05e07d728902b2	2015-09-26 04:42:08
4bce9552bc710d3835c25e0ae47df9e763b8c568180b65e9463f2dcf919f918f	2015-09-26 04:49:23
b684d08c6fd6ade5fc26eb26ed69095bbc5066fdbe968966426db2fd5276ae90	2015-09-26 04:50:57
e29bae912ed2c996b40752f622cb1935304835d5dac6ccbbb433c2f41fb32aac	2015-09-26 04:57:19
985237895c17e99065c6db3d86d98725de8380776979d16c6d76ecde5cb2facf	2015-09-26 05:04:33
217e64d22868bff1d8e5567b0204804ccde1752336ac7fbb8296518a72fb3b6f	2015-09-26 05:15:24
7b6f5b457e9ae8252c38705dc42a8a3266910b3c7ba25ae95b28198bcf8ccae8	2015-09-26 05:20:45
18afa3b2947efac6bf8d6a2fb922a7f4eff3d1851b323762817014b7fea34ba2	2015-09-26 05:26:34
df4b18e6154bf6c1c614f9b4da12beda761c1ac64d681d62bab979f85eb51268	2015-09-26 05:29:32

SHA-256	Date
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3ab1848e7ec9f9baf8066c33bd873e8e1a49763233f4068dccf53cda07a06290	2015-09-26 05:32:39
297ef310a1cf2e313e0a4dae214fe8dbffe272111202f0dc9c880b419cf5df40	2015-09-26 05:45:08
9d39f8dfe9bd489f758c91868787b4dca0bbde1f307d166b46c542c429207d58	2015-09-26 05:45:49
49d114261ceb4f40b05550128e120925fc7a661b208f740bf1e0259c7323aeb5	2015-09-30 10:18:57
e1626945e2f92db34fdd0686a17942b46bf55917ed24ce92d33365d8be47838e	2015-10-01 17:21:10
e10dd835b516c161cb3e0eb0b263dcdd10628359ef040bc071775f995b738234	2015-10-13 01:06:28
4e32d986190111d3fbd3b9b3f382b9f3f9f4843678e63a0bfce8e0fa5e919979	2015-10-22 05:15:33
7d181d514e39a78c568d4e775d9d3c4362e96c832032040ef544d2f09665b315	2015-10-23 16:33:51
94852e5e48934816cc103ad52dba511053f721aa9344e8b4ca558a39878eb859	2015-10-23 17:28:56
139211579a7d0f00685b5f3dd6c833e28c9dc4161c0f5c7e024ddb97e795db48	2015-10-23 22:12:38
c985237c20a106887efbad31d86da6639ddb5a994af5836428cc2a74109a1462	2015-10-26 05:48:15

SHA-256	Date
9b213b0a592d91004b5bda28d69dd4426616bbb0e5130516eb35ec467d6f603e	2015-10-28 13:56:39
1556c461ff12468e7124a51a22355fc5e590059c01b924e2d06af867228c1506	2015-10-28 17:22:29
ae821737978bc1a24cc0e095933cbebb7c7b2c5252dc67d0020b4506609d9948	2015-10-29 00:45:20
8634eae65f381022143e5bced8e5dc19aa406b7b750ead3d6fbd27cf68d90505	2015-10-29 18:37:57
09c929cafc14333e03feedf2adc48ad139ebb1c89d019c238f2a2b29d0aaf5d7	2015-10-30 15:17:07
9d751b9b44a9f1e6f400a596ebe186ab1dc3729507e2bb9b0de63925e1af8df8	2015-10-31 16:45:41
ebc76b0d401cfbe5d952afc86b30538657204200fa0d83cc4f87df50eae3aaca	2015-10-31 18:31:02
11e170f7098498ba0d48f006d4f8e8eb8dc7cafdc4ba64abbc77f4d1ad6c0d1b	2015-11-01 11:57:30
d0e35aab7229d23afce4a53f28bb21ba2a31d397e7f6599819c7d0f432d6abf2	2015-11-01 13:50:13
0cb98230f7d96827db2c6c2b66a36473d5aed396677a0cfbbb3581ba958d9920	2015-11-01 21:46:21
1267ac794fa1c0596f82e4ed8ef917831a112b54eeeb8ffa54c507d00bb2e561	2015-11-03 18:14:24
1d262cd0b390381587aebfee4737e740dcda3babec3feaae9768e6558cebdbc0	2015-11-03 21:25:13

SHA-256	Date
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92058ac110f9f2528f63b6006b171a2feff24f12778739b96e1d1347988ab1f2	2015-11-05 03:29:35
d55a53a862a918771c79beb7e98e108581efe8affc355a6b115b13b4420bcd37	2015-11-05 04:17:11
977a8ed2aa542fcd8d8f960a07aa5fc829f6e646a46fc26721e8ce6b9f6be125	2015-11-05 04:24:14
063b5e79d6c97074b1351c0728f9a59b18bea6ccd2a1339dc6cd747047d09741	2015-11-05 05:22:52
41fe5b1a4ae4ffc983326143a1ef46626fcb7dd5850ddf182f6c2f4a6f49feb5	2015-11-05 10:56:31
593e07071af8129992b3b08b9a2fdf309a17f37386f6947739cbf20bab312aa4	2015-11-05 11:26:03
e5aeebab14e6c16dd4e15fd73776ef6eef3f6bd81c0fdea04694fcdcafc0cea	2015-11-05 13:38:00
68ddd641ac15acd33155b40d23563f1d811bbb97b1654ce7e2bb7314d3c0e723	2015-11-05 22:12:03
0cf89a1bb82f27efd03b97b6db9b30bf7a56892f7e872e2679e2337b4d78e6ab	2015-11-06 02:50:47
7d334d84e7bedb42d45cca6aa7140d560f7515d467e590989afe183cacc2d5b9	2015-11-06 09:31:32

SHA-256	Date
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6732880f32454b0019a3da3ba2434ba249bccaea6b1414d435e33270dc9145b7	2015-11-08 11:28:23
2abf713fa4345124da334e8f241c32c811d7714a32133a216f3ddf5181068a7b	2015-11-09 05:31:35
78bb38aaa8a1d2c4a46e38bd940d96fcc19cb8d9925479f45c9299078d07f688	2015-11-09 05:35:54
5c6fa11b7bd17edcd3dbc46a3853f8b8933ae12e1c86daa461fa90cfb6d0e526	2015-11-09 06:19:31
93a7e3b39eb6f8789d141831e0836e96de3a8506154cf47219f7a720bdb34fd0	2015-11-09 06:26:47
55b03a2297e77390267407e494b44ec62977e8317de81c8d10e15033c58ad993	2015-11-09 06:35:46
dd8b3969cc7b2c49c57885369c95994fc99278eaccffa61030da3b8fdd774609	2015-11-09 06:37:20
e98d6a1ff4ac2c0b2baa48d7ea6b8802c527daf89e7e646d50279029b0228af1	2015-11-09 07:01:29
bddc2e4b263b392775375c35eeef4eee09729ee43293c505a49d61318354bdaf	2015-11-09 07:27:48
4689314a20b79dec52b3baabb9e644cf3c43971ddfeef05a5cb72e8620a2681f	2015-11-09 07:45:45

SHA-256	Date
13aa336c311705f71dd6709caa2d76a0a5c41adc4fe1499bc8da8139a12a7be5	2015-11-09 08:44:54
2db4f9e5300583af806705d66e8641c89aba6f2fc783c66ba55097c5820b0001	2015-11-09 09:50:00
de62490139b605e6d4122562c835ed835a29139db08e165c942a1784d6c17af5	2015-11-11 14:24:04
9da768db9af60f543b69652f7f731439c6036841bdfa5b5b0f7173f6edae5e55	2015-11-13 14:14:19
a9f7ace21338b4c2437ed3263ace16f426f2e180b3e7bb73b981aef9a5c05636	2015-11-13 14:18:46
88ebe7caafa96a47a016b0b19fc0b91207a794c2af9f0b50ab19b50cf7ce807e	2015-11-13 19:05:41
7b677001233b7197d77d4e557bd448b30c84eab2586635e11c3fe73919eead1e	2015-11-13 19:22:01
326ef39b87ca40e4ec5e175fbb147b89d9cabe6d78b11c68f6bf37ce5d62f28a	2015-11-13 20:31:22
b9830349f8c505333de3216d2bf2979a3ac3897abbd6ef0962ca95cda9068bad	2015-11-13 20:57:02
12ce8990af784315cb321f2a1624f17c0c91284af8acf47fbe5a75a7905174f9	2015-11-13 20:57:18
b1b063c0b14df10584ca9eb0169fb1f70cadf765589b90eec5681415bcfb8658	2015-11-14 06:18:47
0caa6dbb549b3c1160effc26a77f3cbf68d15392d8c1ed58b59887ae3cca57a3	2015-11-15 02:42:09

SHA-256	Date
cbfa9af2216b974e24f5ad86e7ad23194d2a8d147d9b23a9ff58905fe09ae8ac	2015-11-15 03:04:43
4431a94ef83dd067d43ee5ee182f2a272741fc42c7a6a56cadd2a22205809cd0	2015-11-15 03:25:05
f2e95c4118efd5cee2b423ac66cb9bdb51ed9eeef388a7c537659954ba7bbd1b	2015-11-15 03:58:05
e06c62d4e8df35473a5012ea68918e7bf6a319f9a14974e472120e0df89df515	2015-11-15 04:36:45
dc134b77daa53d1b56978503275cb208b530191a300f5f6560996196958c391e	2015-11-15 06:01:30
5706eb271742c273e58c419059c986b0eb2214e5e0a471b29547180c00580a	2015-11-15 06:06:14
f9ddfb291a1c785fd2bcf3f9ed59f7d64e0d1f9f1b39ac7f369f881244fe516d	2015-11-15 06:20:31
4ac45d73bfa0e1a64a839e3bedbe9b067ab0dfec31f00e05b2390757e3c34b5e	2015-11-15 07:42:41
bf7988ee1f5669c20230ee2f0d210e39def4a40faec3aff04893ef8b544f68b3	2015-11-15 08:01:08
243e0cc9f1f1132861622766626b4fb028bb6ffe2e6bb8086ed99ba09ea0d31a	2015-11-15 08:09:20
6a7a202fa2d494cbf43b1d44c4710e79eca95b68d83e99ac8a93e3471382449a	2015-11-15 11:15:27
fd2bebd062add402cb67efad61add04040224977e98ff14d889984a21e91f60	2015-11-16 04:57:37

SHA-256	Date
8546334b5467b052559f16d12f3bada6f7127a7d86bf1b1099b48aae7530dcf1	2015-11-17 00:07:09
e43e1bf11bd6c2e5c6611a3ac18a0545b18af613c97d64fc559b9b659fb194bd	2015-11-17 07:09:15
033819226a24287567cd7c2b222bd82181dcb2d63023dd5f91a61b83b33a6db6	2015-11-17 17:26:53
afba7c794d3dc68d62d796164f0e4c2828891cd70d6c0b4094e6fa4775c3bf28	2015-11-18 18:21:46
ab636ec259b3538b64c981909b390ffe4dfb314854c7aa7bcd67da46401963c	2015-11-20 02:11:05
fbdba30dabdf2216674a5ef7ba031757abfea05d2cdbaf3bdec3a53d68dff04a	2015-11-20 07:18:52
0b4a9e84de3c73320189208171e1113f18a1f2535c2d1a5b71839ed747d6f88e	2015-11-22 05:36:21
7696de9ce43e95593a38048a5d52aaea354c3ea5e636d78e6707ef87630ae032	2015-11-23 05:24:42
abf9ca41ae38bbd1691f4f554f27738dc379ed8d458f9a7b8398134598711278	2015-11-23 05:29:31
cbd3be76418d225c41838113419a7b5c8ec8992dc3fcb7a7d4f005883409463	2015-11-27 01:24:52
a7238becf37432a02d945a3dcdd97ac997b4af8f032c6baf5c8296b95f492582	2015-11-27 01:43:36
678e0581b70e57d3d4a607fe052f05a55ce9f4e8f66122ce84cc25bc7bad815c	2015-11-27 02:41:58

SHA-256	Date
7505ad7ac7ab0c2e11ead5c8acf31dd3de8494d2b2ef9a9d08c9f128e9635bee	2015-11-27 03:22:56
36faf4b93d40692adb51cb8c371d1310a2f631c8e0097fe219a69b5f770600c0	2015-11-27 03:23:55
847859e0163c364452b13444f697a0853ad49c019128de5eae33ed7a8e604f04	2015-11-27 03:47:51
7feceaf5398693bb4fbbbecab4f6127b4a42a1a79b1f2b893fa80dc2a7d5be83	2015-11-27 04:24:32
c78c176622b5dac5aff1c36d2008a0567adf1a3b9041a3d75ff448462dbd29d1	2015-11-27 04:29:13
9e0c2351b31044052a0218675a300ae7e570c317519ef8b5d171731c05e72bfa	2015-11-27 05:52:56
bca404d9d88790bdfcaa3b4edeaf7ec7cbe0df77fe8f5c4e388c228549451fff	2015-11-27 06:10:32
f447533e3ddec52305be9177511988be3568b56c0918a5b32acf3989150ecc9a	2015-11-27 10:26:26
2d53fbd311034a98a2f3d120b97db623481574c13887b1f8a584849e3a8e4d24	2015-12-16 20:06:59
c85c0797afb881d6fc71fbc7007f3e7e4a3645a832bff766f06fcdf3f1a64483	2015-12-16 20:16:28
9bdf5610fdb740ac15d710205fbf15cbd04807d634d3446fcc91c925c55ac862	2015-12-16 20:45:18
f3a06de90f14e8b03253dfd49c6a571eba000b3e5ee3e36fb31e9b2dbb196f29	2015-12-23 18:13:21

SHA-256

Date

82e7ea5ef62156105c12e6c6d3703d928aa1fd0c276003987792fb631232d564

2015-
12-24
12:48:18

Archived Comments

Note: *I removed the Disqus integration in an effort to cut down on bloat. The following comments were retrieved with the export functionality of Disqus. If you have comments, please reach out to me by Twitter or email.*

Jawad Ahmed Jul 22, 2019 06:40:13 UTC

Hi, Can you share the .pcap file of this malware, if you have it? I want to see the pattern like how many domains are generated, how many NXDomains are generated etc.

Johannes Bader Jul 22, 2019 08:33:10 UTC

Here <https://mega.nz/#!ObwxnAgJ!...> is a PCAP for 1e135d7e024f2fb57182ae3313acae6d.

I only ran it on a simulated network, so you won't see how many domains actually resolve and you only see the decoy domains (same pattern though).

If you are interested in seeing the ratio of resolving to NX domains, I recommend you run the Python script to generate the 5000 domains for the day and check them. I would be surprised if anyone is still registering domains for Qakbot.