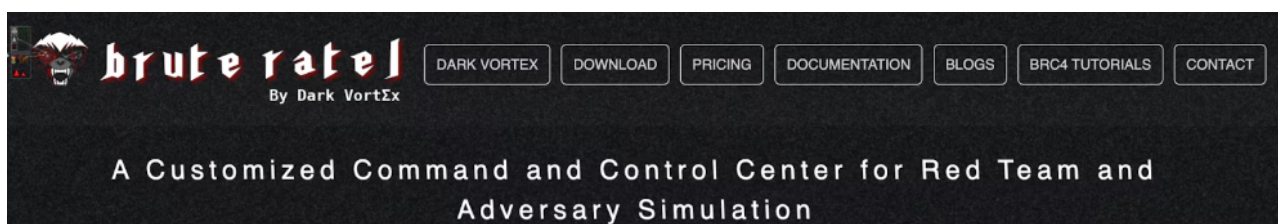


How to detect Brute Ratel activities

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Brute Ratel (BRc4) is a *Command and Control* (C2) framework designed to help attackers evade defence systems and remain undetected while executing malicious commands. Used in simulations of real-world attacks, this tool helps red team members deploy badgers on remote hosts. Badgers are similar to **Cobalt Strike** beacons and connect attackers to a remote command and control server, providing them with remote code execution capabilities.



The current version of Brute Ratel allows users to create command-and-control channels using legitimate tools such as **Microsoft Teams**, **Slack** and **Discord**. It also uses undocumented syscalls instead of standard Windows API calls to avoid detection, and injects shellcode into running processes. **BRc4** includes a debugger capable of detecting and bypassing **EDR** hooks and detections, as well as an easy-to-use visual interface to assist with **LDAP** queries across domains.

Similar to what I did in a previous post focusing on the [Sliver framework](#), I try to outline a multi-layered approach to detecting malicious activity related to this tool, focusing on use of endpoint detection and response (EDR) tools, network traffic analysis, and file system monitoring.

Network Traffic Analysis

The detection of Brute Ratel traffic patterns is not easy, because the framework allows attackers to hide malicious traffic into communications with legitimate tools such as **Microsoft Teams**, **Slack** and **Discord**.

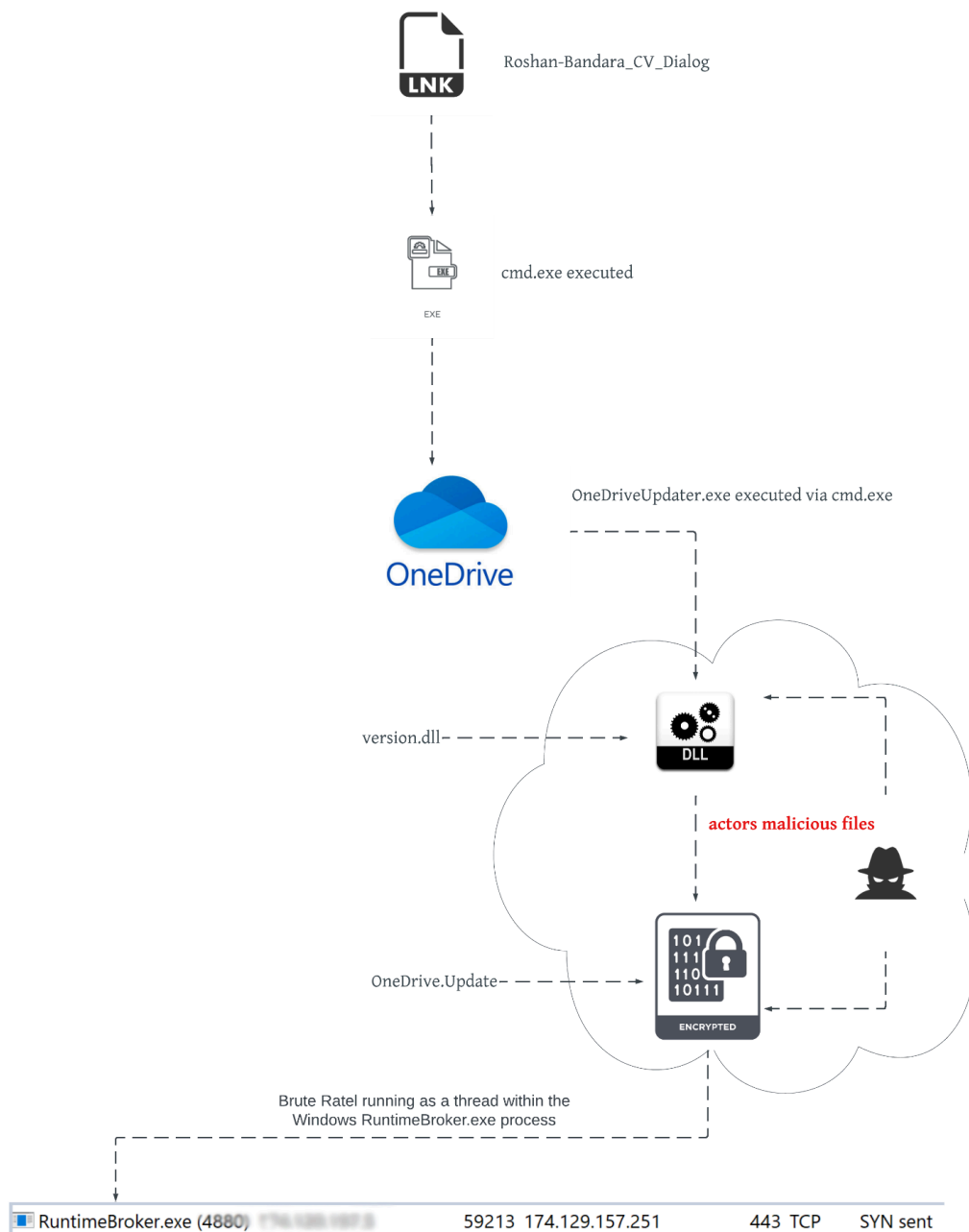
However, in [this article](#) the security firm **YOROI** suggests using the following Yara rule:

```
rule brute_ratel
{
  meta:
    author = "Yoroi Malware ZLab"
    description = "Rule for BruteRatel Badger"
    last_updated = "2023-02-15"
    tlp = "WHITE"
    category = "informational"
```

```
strings:
  $1 = {8079ffcc74584585c075044883e920448a094180f9e9740a448a41034180f8e97507ffc24531c0ebd731c04180f94c7521
  $2 = {565389d34883ec2885db74644889cee8?????????31c9ba?????????4989c0e8?????????448d430165488b1425300000004}
condition:
  (uint16(0) == 0x5A4D or uint16(0) == 0x00E8 or uint16(0) == 0x8348) and ($1 or $2)
}
```

File System Monitoring

According to article by [Unit42](#) and [Splunk](#), recent campaigns using **Brutal Rater** have exploited fake **Microsoft OneDrive** installers encapsulated in .iso files to minimise detection by antivirus software.



This information can be used to create a hash list of possible files associated with payload implantation attempts:

SHA
1FC7B0E1054D54CE8F1DE0CC95976081C7A85C7926C03172A3DDAA672690042C
31ACF37D180AB9AFBCF6A4EC5D29C3E19C947641A2D9CE3CE56D71C1F576C069
F58AE9193802E9BAF17E6B59E3FDBE3E9319C5D27726D60802E3E82D30D14D46

SHA
3ED21A4BFCF9838E06AD3058D13D5C28026C17DC996953A22A00F0609B0DF3B9
3AD53495851BAFC48CAF6D2227A434CA2E0BEF9AB3BD40ABFE4EA8F318D37BBE
973F573CAB683636D9A70B8891263F59E2F02201FFB4DD2E9D7ECBB1521DA03E
DD8652E2DCFE3F1A72631B3A9585736FBE77FFABEE4098F6B3C48E1469BF27AA
E1A9B35CF1378FDA12310F0920C5C53AD461858B3CB575697EA125DFEE829611
EF9B60AA0E4179C16A9AC441E0A21DC3A1C3DC04B100EE487EABF5C5B1F571A6
D71DC7BA8523947E08C6EEC43A726FE75AED248DFD3A7C4F6537224E9ED05F6F
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EA2876E9175410B6F6719F80EE44B9553960758C7D0F7BED73C0FE9A78D8E669
B5D1D3C1AEC2F2EF06E7D0B7996BC45DF4744934BD66266A6EBB02D70E35236E
55684a30a47476fce5b42cbd59add4b0fbc776a3
66aab897e33b3e4d940c51eba8d07f5605d5b275
b5378730c64f68d64aa1b15cb79088c9c6cb7373fcb7106812ffee4f8a7c1df7
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392768ecec932cd22511a11cdbe04d181df749feccd4cb40b90a74a7fdf1e152
e549d528fee40208df2dd911c2d96b29d02df7bef9b30c93285f4a2f3e1ad5b0
a8f50e28989e21695d76f0b9ac23e14e1f8ae875ed42d98eaa427b14a7f87cd6
025ef5e92fecf3fa118bd96ad3aff3f88e2629594c6a7a274b703009619245b6
086dc27a896e154adf94e8c04b538fc146623b224d62bf019224830e39f4d51d
17decce71404a0ad4b402d030cb91c6fd5bca45271f8bf19e796757e85f70e48
17e4989ff7585915ec4342cbaf2c8a06f5518d7ba0022fd1d97b971c511f9bde
200955354545ef1309eb6d9ec65a917b08479f28362e7c42a718ebe8431bb15d
221e81540e290017c45414a728783cb62f79d9f63f2547490ec2792381600232
25e7a8da631f3a5dfec99ca038b3b480658add98719ee853633422a3a40247d
28a4e9f569fd5223bffe355e685ee137281e0e86cae3cc1e3267db4c7b2f3bcd
2ddc77de26637a6d759e5b080864851b731fdb11075485980ece20d8f197104c

SHA
31fe821e4fac6380701428e01f5c39c6f316b6b58faff239d8432e821a79d151
331952c93954bd263747243a0395441d0fae2b6d5b8ceb19f3ddb786b83f0731
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3baace2a575083a7031af7e9e13ff8ed46659f0b25ce54abe73db844acfad11a
3f63fbc43fc44e6bf9c363e8c17164aeb05a515229e2111a2371d4321dcde787
4766553ce5ff67a2e28b1ee1b5322e005b85b26e21230ffbfa9622e7c83ed0917
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6fdd81e31f2bec2bdda594974068a69e911219d811c8de4466d7a059dd3183a3
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7fe1ff03e8f5678d280f7fd459a36444b6d816b2031e37867e4e36b689eccd33
83b336deca35441fa745cd80a7df7448ce24c09dd2a36569332ae0e4771f36a6

SHA
88249de22cefaf15f7c45b155703980fb09eb8e06b852f9d4a7c82126776ee7e
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db987749ef4a58c6a592a33221770d23adcb2efce4a5504aabc73d61cd356616
dc9757c9aa3aff76d86f9f23a3d20a817e48ca3d7294307cc67477177af5c0d4
dcb986e45f1cf38794acec5e7f576a8dff6fbec66e6a09e3cc92596c796ad0d3
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SHA
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fdeb6a6aaee94fe204fb986f6d78e64a9086c5f64e315d8c5e90b590f0007af8

Endpoint Detection and Response (EDR) Tools

Using EDR tools it is possible to detect Brute Ratel activity by monitoring for specific behaviors, such as the use of specific network connections.

Using information provided by **Uni42**, **Yoroi** and **Splunk** it is possible to create a list of network indicator useful to spot malicious activities performed with the framework:

IP/Domain
104.6.92[.]229
137.184.199[.]17
138.68.50[.]218
138.68.58[.]43
139.162.195[.]169
139.180.187[.]179
147.182.247[.]103
149.154.100[.]151
15.206.84[.]52
159.223.49[.]16
159.65.186[.]50

IP/Domain
162.216.240[.]61
172.105.102[.]247
172.81.62[.]82
174.129.157[.]251
178.79.143[.]149
178.79.168[.]110
178.79.172[.]35
18.133.26[.]247
18.130.233[.]249
18.217.179[.]8
18.236.92[.]31
185.138.164[.]112
194.29.186[.]67
194.87.70[.]14
213.168.249[.]232
3.110.56[.]219
3.133.7[.]69
31.184.198[.]83
34.195.122[.]225
34.243.172[.]90
35.170.243[.]216
45.144.225[.]3
45.76.155[.]71
45.79.36[.]192
52.48.51[.]67
52.90.228[.]203

IP/Domain
54.229.102[.]30
54.90.137[.]213
89.100.107[.]65
92.255.85[.]173
92.255.85[.]44
94.130.130[.]43
ds.windowsupdate.eu[.]org

References

- <https://yoroi.company/research/hunting-cyber-evil-ratels-from-the-targeted-attacks-to-the-widespread-usage-of-brute-ratel/>
- []
- []

Source: <https://andreafortuna.org/2023/02/23/how-to-detect-brute-ratel-activities>