

Ticker Test Plan

Jonathan Butler, Adam Matthes, Mark Workman

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1 Introduction

This program allows for the user to pass multiple .pcap files via command line. As such, there are a number of sample files for testing found in the project under the test folder.

2 Sample Files

2.1 Non-Conforming Map Files

1. test/samp/empty.pcap: Empty file.
2. test/samp/gmailconvert.pcap: Non-Zerg file containing Gmail network traffic.

2.2 Instructor Provided Map Files

1. test/samp/C_getstatus.pcap
2. test/samp/C_getstatus_S_normal.pcap
3. test/samp/G_normal.pcap
4. test/samp/S_normal.pcap
5. test/samp/M_hello.pcap
6. test/samp/M_ipv6.pcap
7. test/samp/bad_multi_command.pcap
8. test/samp/easy_3n0r/packet00.pcap
9. test/samp/easy_3n0r/packet01.pcap
10. test/samp/easy_3n0r/packet02.pcap
11. test/samp/easy_3n1r/packet00.pcap
12. test/samp/easy_3n1r/packet01.pcap

13. test/samp/easy_3n1r/packet02.pcap
14. test/samp/easy_5nxx/packet00.pcap
15. test/samp/easy_5nxx/packet01.pcap
16. test/samp/easy_5nxx/packet02.pcap
17. test/samp/easy_5nxx/packet03.pcap
18. test/samp/easy_5nxx/packet04.pcap
19. test/samp/easy_v62n0r/packet00.pcap
20. test/samp/easy_v62n0r/packet01.pcap
21. test/samp/med_4n1r/packet00.pcap
22. test/samp/med_4n1r/packet01.pcap
23. test/samp/med_4n1r/packet02.pcap
24. test/samp/med_4n1r/packet03.pcap
25. test/samp/hard_6n0r/packet00.pcap
26. test/samp/hard_6n0r/packet01.pcap
27. test/samp/hard_6n0r/packet02.pcap
28. test/samp/hard_6n0r/packet03.pcap
29. test/samp/hard_6n0r/packet04.pcap
30. test/samp/hard_6n0r/packet05.pcap

2.3 Custom Built PCAP Files

1. test/samp/multimerge.pcap: Multiple instructor provided .pcap files combined into one.

3 Automated Test Cases

Automated test cases may be executed with `make make check`. This will both build the tests and run them. These are the unit tests of functions.

3.1 Common Test Cases

Add a build target of make profile, which builds the program with profiling information.

1. Installation

```
git clone git@git.umbc.tc:tdqc/tdqc10/jbutler/zergmap.git; cd zergmap
```

Expected: Directory is created.

Perquisites: In the project's directory.

2. Correct Branch

```
git branch
```

Expected: master is active.

3. Build Cleaning

```
make; make clean; ls *.o
```

Expected: No such file or directory error.

3.2 Zergmap Test Cases

1. Build

```
make zergmap; ls zergmap
```

Expected: file is listed.

2. Build

```
make; ls zergmap
```

Expected: file is listed

3. Build Debugging

```
make debug; readelf --debug-dump=decodedline zergmap
```

Expected: Debugging info is listed.

4. No Command-Line Arguments

```
./zergmap
```

Expected: Program exits with usage error.

5. Non-Existent File

```
./zergmap test/samp/doesnotexist.pcap
```

Expected: Program exits with "no such file" error.

6. Multiple PCAPs One Good One Bad

```
./zergmap test/samp/bad_multi_command.pcap test/samp/G_normal.pcap
```

Expected: Program processes both files and prints out number .pcap files that were (1) and were not (1) able to be processed.

7. Empty .pcap File

```
./zergmap/test/samp/empty.pcap
```

Expected: Program exits with cannot read all file heard bytes error.

8. Gmail File
`./zergmap test/samp/gmailconvert.pcap`
Expected: Program exits with multiple "unable to decode" errors.
9. Hello Message File
`./zergmap test/samp/M_hello.pcap`
Expected: Program displays "zergmap does not process message payloads" message.
10. Command Get Status File
`./zergmap test/samp/C_getstatus.pcap;`
Expected: Program exits normally with GET STATUS command.
11. Command Get Status Status Normal File
`./zergmap test/samp/C_getstatus_S_normal.pcap;`
Expected: Program exits normally with no message printed, as health is above 10
12. GPS Normal File
`./zergmap /test/samp/G_normal.pcap`
Expected: Program exits with normally with GPS coordinates message.
13. Status Normal File
`./zergmap -h 75 /test/samp/S_normal.pcap`
Expected: Program exits normally and prints "low health" status message.
`./zergmap /test/samp/bad_multi_command.pcap`
Expected: Program exits with normally with four "bad packet" messages.
14. Message IPv6 File
`./zergmap /test/samp/M_ipv6.pcap`
Expected: Program exits normally and displays "zergmap does not process message payloads" message.
15. Zergmap Instructor Provided Files
`./zergmap /test/samp/<dirname>/<filename>.pcap`
Expected: Program processes .pcap file and prints health status accordingly and recommends Zerg(s) for removal if any.