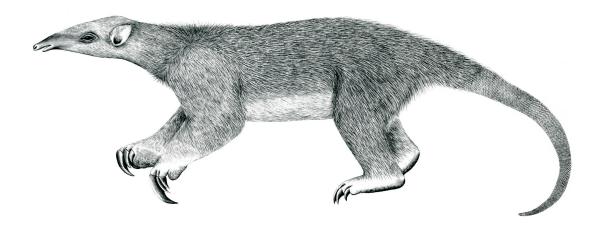
Tranalyzer2

Generate PDF report out of PCAP files or NetFlow records



Tutorial



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1 PDF Report Generation from PCAP using t2fm

1.1 Introduction

This tutorial presents t2fm, a script which generates a PDF report out of a PCAP file. Information provided in the report includes top source and destination addresses and ports, protocols and applications, DNS and HTTP activity and potential warnings, such as executable downloads or SSH connections.

1.2 Prerequisites

For this tutorial, it is assumed the user has a basic knowledge of Tranalyzer and that the file $t2_aliases$ has been sourced in \sim /.bashrc or \sim /.bash_aliases as follows¹ (make sure to replace \$T2HOME with the actual path, e.g., \$HOME/tranalyzer2-0.9.3):

```
# $HOME/.bashrc

if [ -f "$T2HOME/scripts/t2_aliases" ]; then
    . "$T2HOME/scripts/t2_aliases" # Note the leading `.'
fi
```

1.2.1 Required plugins

The following plugins must be loaded for t2fm to produce a useful report:

• basicFlow • basicStats • txtSink

1.2.2 Optional plugins

• sslDecode

The following plugins are optional:

```
• arpDecode
                                    • httpSniffer , configured as
                                                                        • nDPI, configured as follows:
                                      follows<sup>2</sup>:
• dnsDecode
                                                                             - NDPI OUTPUT STR=1
                                        - HTTP_SAVE_IMAGE=1
• geoip
                                        - HTTP_SAVE_VIDEO=1
                                                                        • portClassifier , configured
                                        - HTTP_SAVE_AUDIO=1
                                                                          as follows:
• pwX
                                        - HTTP_SAVE_MSG=1
• sshDecode
                                                                             - PBC_NUM=1
                                        - HTTP_SAVE_TEXT=1
```

- HTTP_SAVE_APPL=1

- PBC_STR=1

If one of those plugin is not loaded, messages like N/A: dnsDecode plugin required will be displayed in the PDF where the information could not be accessed.

¹Refer to the file README.md or to the documentation for more details

²This is only required to report information about EXE downloaded

1.2.3 Packages

The following packages are required to build the PDF:

• texlive-latex-extra

· texlive-fonts-recommended

1.3 PCAP to PDF in One Command

For simplicity, this tutorial assumes the user wants a complete report, i.e., requires all of the optional plugins. The -b option builds and configures Tranalyzer and the plugins, the -A option opens the generated report.

1. Run t2fm directly on the PCAP file (the report will be named file.pdf):

1.4 Step-by-Step Instructions (PCAP to PDF)

Alternatively if you prefer to configure Tranalyzer, build the plugins and open the generated report yourself:

- 1. Make sure all the plugins are configured as described in Section 1.2
- 2. Build Tranalyzer and the plugins ³:

```
t2build tranalyzer2 basicFlow basicStats txtSink arpDecode dnsDecode geoip \httpSniffer nDPI portClassifier pwX sshDecode sslDecode (Note that those first two steps can be omitted if t2fm -b option is used)
```

3. Run ${\tt t2fm}$ directly on the PCAP file (the report will be named ${\tt file.pdf}$):

```
t2fm -r file.pcap
```

4. Open the generated PDF report file.pdf (Note that this step can be omitted if t2fm -A option is used): evince file.pdf

1.5 Step-by-Step Instructions (flow file to PDF)

Alternatively, if you prefer to run Tranalyzer yourself or already have access to a flow file, replace step 3 of Section 1.4 with the following steps:

1. Run Tranalyzer on a pcap file as follows:

```
t2 -r file.pcap -w out
```

2. The previous command should have created the following files:

```
out_headers.txt
out_flows.txt
```

3. Run the t2fm script on the flow file generated previously:

```
t2fm -F out_flows.txt
```

³Hint: use the tab completion to avoid typing the full name of all the plugins: t2build tr<tab> ... ht<tab> ...

1.6 Step-by-Step Instructions (ClickHouse / MongoDB / PostgreSQL to PDF)

If the clickhouseSink, mongoSink or psqlSink plugins were loaded, t2fm can use the created databases to generate the report (faster).

- 1. Follow point 1 and 2 from Section 1.4⁴
- 2. Build the clickhouseSink, mongoSink or psqlSink plugin:
 - ClickHouse: t2build clickhouseSink
 - MongoDB: t2build mongoSink
 - postgreSQL: t2build psqlSink
- 3. Run Tranalyzer on a pcap file as follows:

```
t2 -r file.pcap -w out
```

4. Run the t2fm script on the database generated previously:

ClickHouse: t2fm -C tranalyzer
 MongoDB: t2fm -m tranalyzer
 postgreSQL: t2fm -p tranalyzer

When generating a report from a database a time range to query can be specified with the -T option. The complete format is as follows: YYYY-MM-DD HH:MM:SS.USEC([+-]OFFSET|Z), e.g., 2022-08-23 12:34:56.912345+0100. Note that only the required fields must be specified, e.g., 2022-08-23 is equivalent to 2022-08-23 00:00:00.000000. For example, to generate a report from the 1st of July to the 11. of August 2022 at 14:59 from a PostgreSQL database, run the following command: t2fm -p tranalyzer -T "2022-07-01" "2022-08-11 14:59"

1.7 NetFlow Records to PDF in One Command

For simplicity, this tutorial assumes the user wants a complete report. The -A option opens the generated report.

1. Run t2fm directly on the NetFlow records (file or directory) (the report will be named 2024.pdf):

t2fm -A -N netflow/2024

1.8 Conclusion

This tutorial has presented how t2fm can be used to create a PDF report summarizing the traffic contained in a PCAP file or NetFlow records. Although not discussed in this tutorial, it is also possible to use t2fm on a live interface (-i option) or on a list of PCAP files (-R option). For more details, refer to t2fm man page or use t2fm --help.

 $^{^4}$ HTTP_SAVE_* do not need to be set as EXE downloads detection is currently not implemented in the DB backends