

TLFeat

A Dedicated, Robust and Fast TLS
Feature Extraction Tool

Benchmarks

Version: 0.90
Date: 2023-07

Benchmarks

This file describes benchmarks of TLSfeat(v0.90) and two state-of-the-art feature extraction tools, Joy and Zeek. Artifacts are public to [download](#). If you have any questions of the test, please contact us zliucd66@gmail.com.

Environment

- Intel 11900k, 128GB RAM, 1TB SSD
- Centos 8.5, GCC/G++ 8.5

Software

- TLSfeat (v0.90, 6 threads)
- Joy (v4.5.0, built from source)
- Zeek (v4.2.0)

Datases

There are six public datasets used for testing.

- [MTA2017-2022](#)
- [Stratosphere](#)
- [CIC-IDS-2017](#)
- [ISCXVPN2016](#)
- [CTU13](#)
- [ISCX2014](#)

Table 1 Statistics of test pcaps

Dataset	#Pcaps	Average size	Total size
MTA2017-2022	1214	6.7 MB	8.2GB
Stratosphere	30	1.0 GB	3.0 GB
CIC-IDS2017	5	9.8 GB	49 GB
ISCXVPN2016	31	77 MB	2.4 GB
CTU13	13	5.5 GB	72 GB
ISCX2014	2	3.5 GB	7 GB

Following tables show performance and artifacts results; blue texts indicate likely incorrect results.

Table 2 Test results of performance (in seconds)

Dataset	Joy	Zeek	TLSfeat
MTA2017-2022	119.4	275.2	16.9
Stratosphere	137.3	220.3	58.2
CIC-IDS2017	450.7	424.0	110.3
ISCXVPN2016	0.4	9.7	3.6
CTU13	355.8	283.6	41.5
ISCX2014	192.1	224.5	33.9

Table 3 Test results of artifacts

Dataset	Tool	#TLS	#Certificate
MTA2017-2022	Joy	89405	81517
	Zeek	89721	128267
	TLSfeat	95162	92959
Stratosphere	Joy	682965	919732
	Zeek	675689	1113524
	TLSfeat	493706	927961
CIC-IDS2017	Joy	343136	642908
	Zeek	332982	627537
	TLSfeat	327194	642979
ISCXVPN2016	Joy	30	58
	Zeek	875	1813
	TLSfeat	780	1155
CTU13	Joy	1504	1931
	Zeek	3634	9404
	TLSfeat	2482	6662
ISCX2014	Joy	7843	2307
	Zeek	267	510
	TLSfeat	1124	1385