Introduction to Operating Systems

Project 1B: Perf tool patch

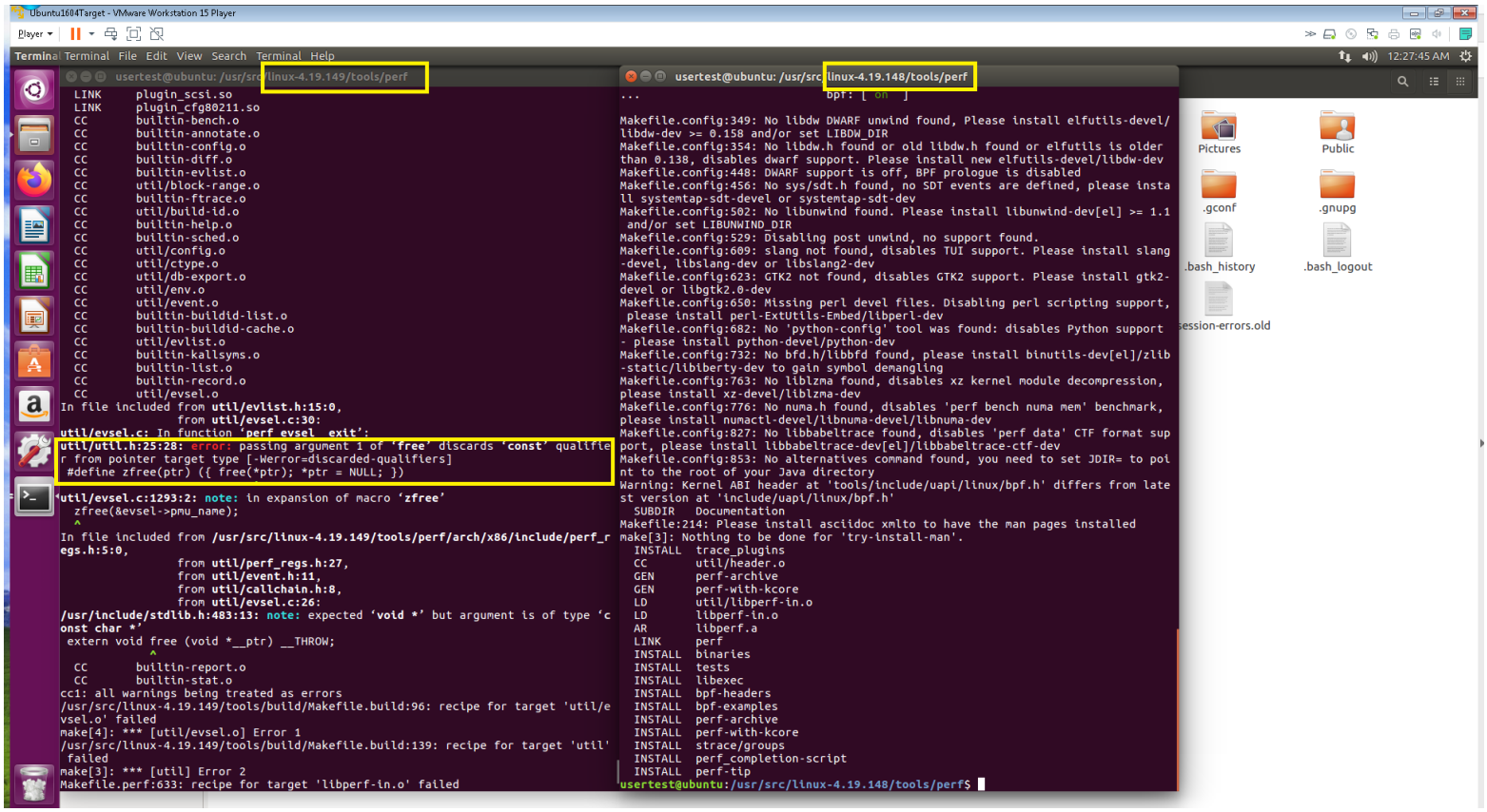
This document shows how to patch the **perf** tool source code to successfully build it.

Affected kernels:

- 4.19.149
- 4.19.150
- 4.19.151
- 4.19.152

Problem:

A problem in the source code prevents to successfully build the tool.



Git comments:

This problem was discovered by the official developers on Sept. 29-30/2020:

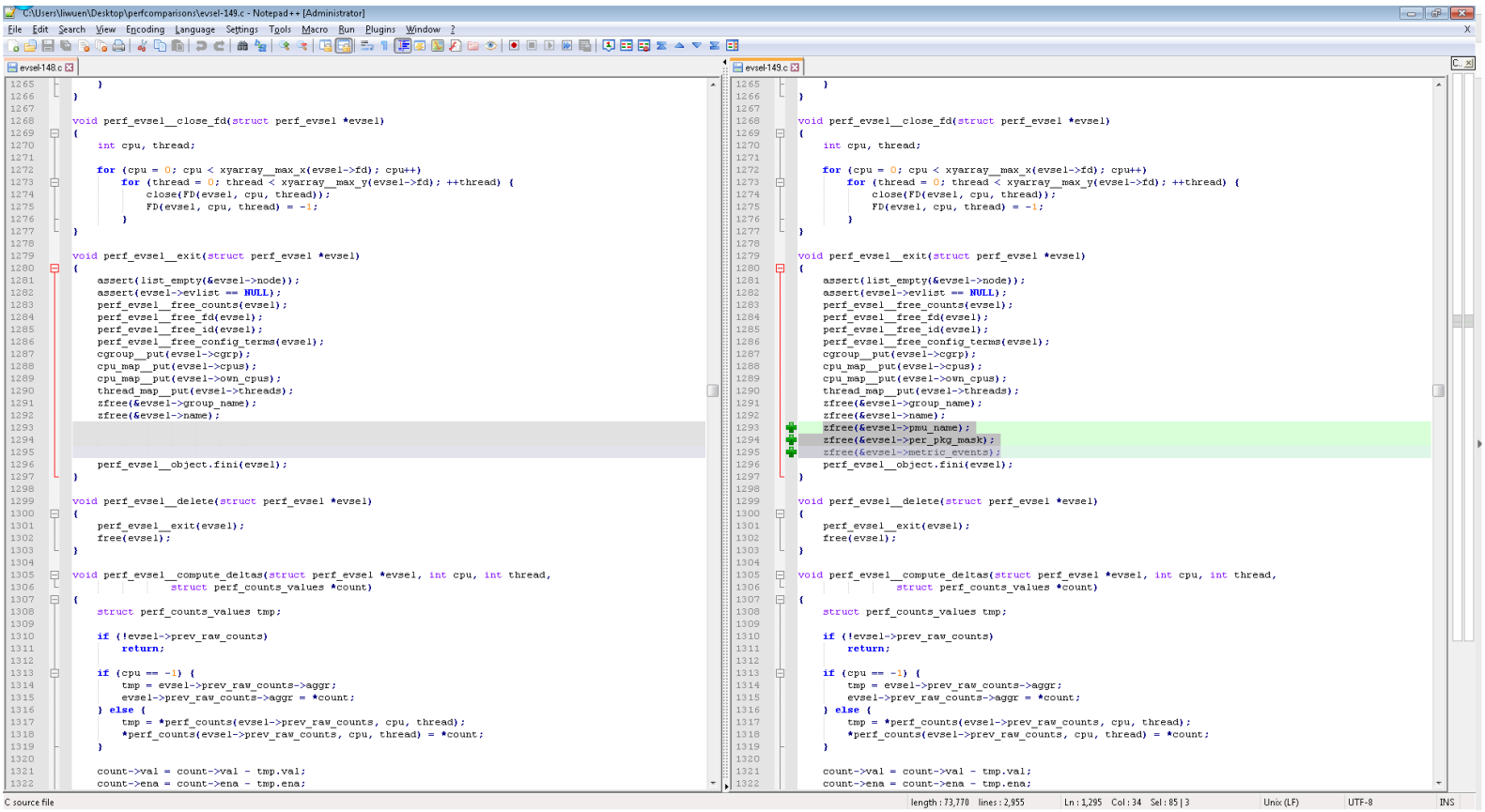
- https://lkml.org/lkml/2020/9/29/2330
- https://lkml.org/lkml/2020/9/30/1024

Solutions:

There are two official solutions for this problem:

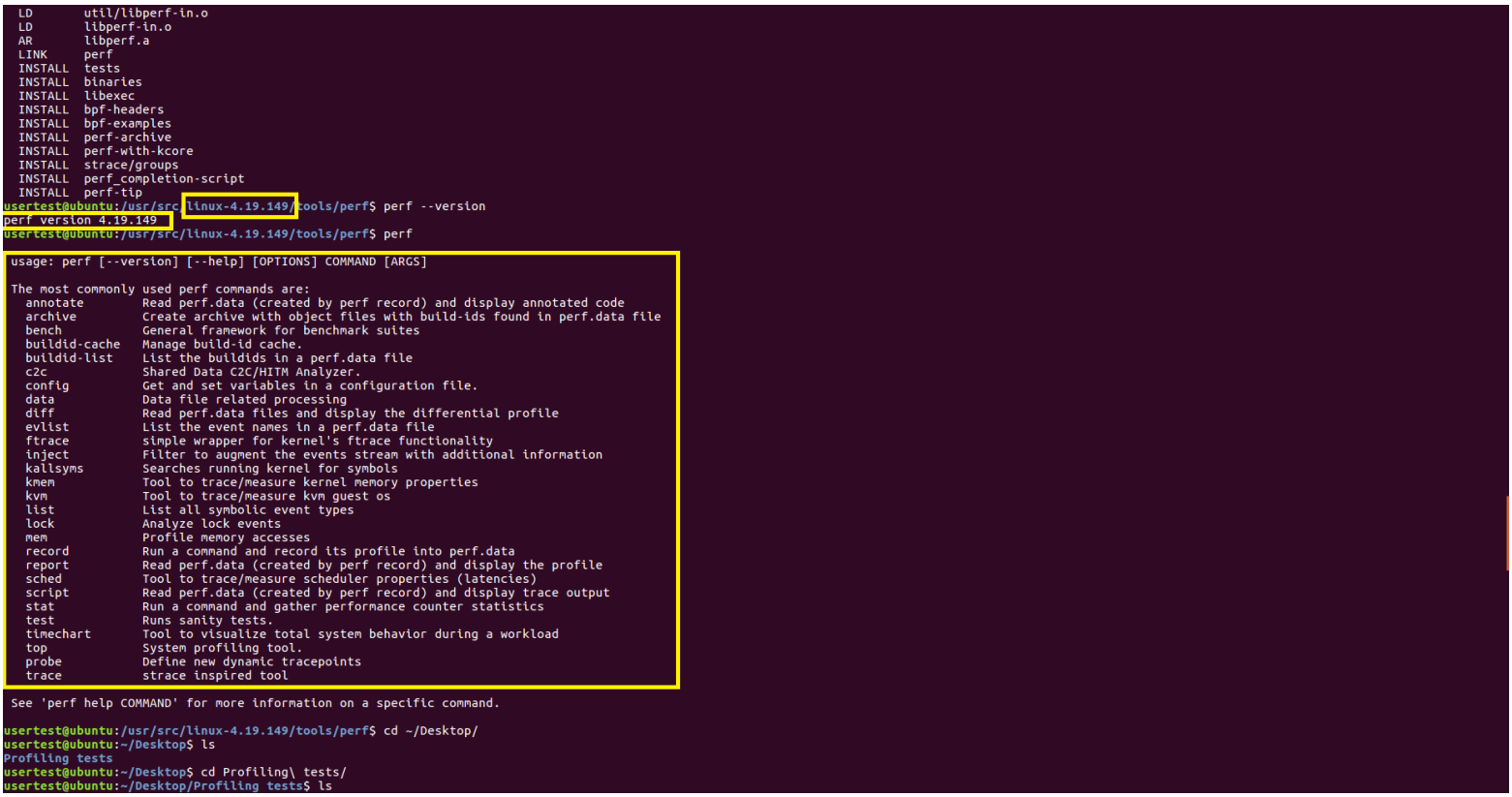
1. Use kernel 4.19.148:
   https://cdn.kernel.org/pub/linux/kernel/v4.x/linux-4.19.148.tar.xz
   This solution requires Section 2 and Section 3 of project 1A.

2. In the affected kernels, go to **linux-4.19.149/tools/perf/util/evsel.c**.
   Locate the following function:
   void perf_evsel__exit(struct perf_evsel *evsel)
   and comment the lines:
   zfree(&evsel->pmu_name);
   zfree(&evsel->per_pkg_mask);
   zfree(&evsel->metric_events);
   (Around lines 1293, 1294 and 1295).



After commenting these lines, save the evsel.c file, and run the commands
$ sudo make
$ sudo make install
(Please refer to Section 2.1 Project 1B)

After patching this file, the build process should be successful.



IMPORTANT NOTES:

1. This patch is a **best-effort** solution (so no guarantees that this will solve all the possible problems).
   If more problems are found later in the affected kernels, please use kernel 4.19.148.
2. In order to avoid this situation in the future, **Project 2 and Project 3 will require to use kernel 4.19.148** (so you will have to download and compile kernel 4.19.148)**.**
3. For more information, please check the related post on E3 forum: https://e3new.nctu.edu.tw/mod/forum/discuss.php?d=72257