Lab 1 ELF

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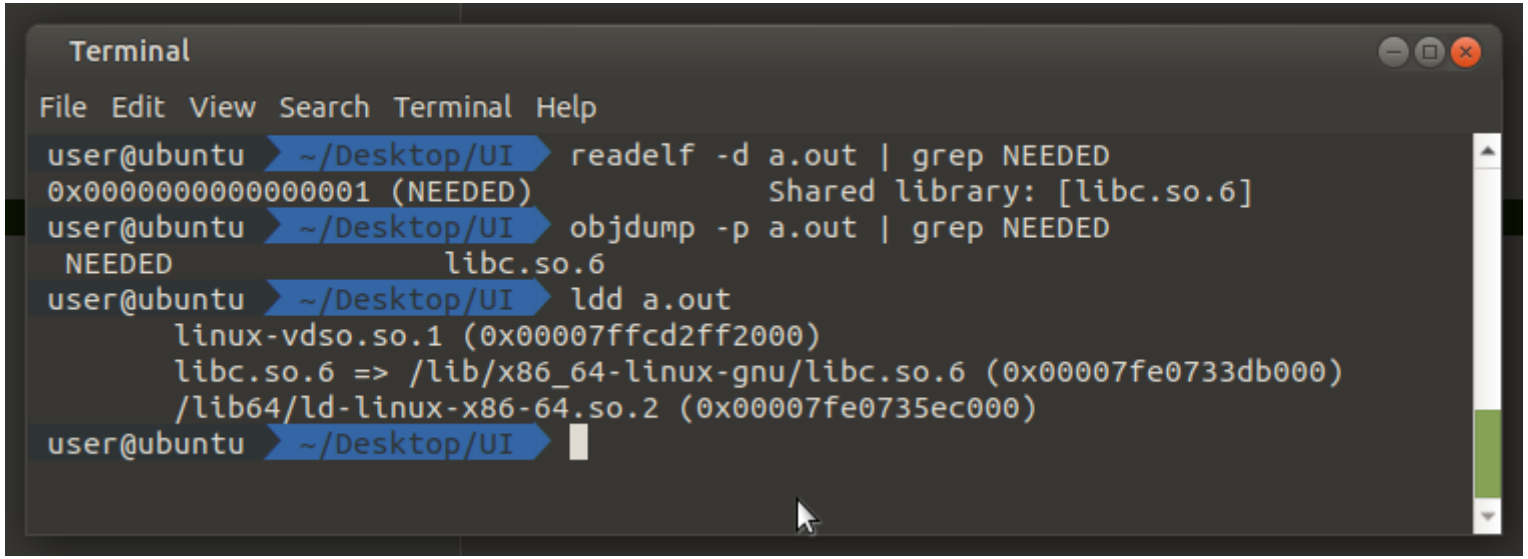
ОТКРЫТАЯ МОБИЛЬНАЯ ПЛАТФОРМА

Useful utilities – readelf, objdump, ldd

- There are subset of helpful utilities to work with elf file format:
- **readelf** - display information about ELF files,
- **objdump** - display information from object files,
- **ldd** - print shared object dependencies.



TASK

- Learn how LDD utility works.
- Implement the app called `bldd` (backward ldd) – that shows all EXECUTABLE files that use specified shared library files. *See example.*
- App must be configurable (for ex. Possibility to set up scan directory)
- App must generate report as the output (txt, pdf, etc.) – can be implemented using any languages and libraries.
- Report must be sorted by number of executable usages (high -> low). *See example.*
- App **must** work with at least following arches: x86, X86-64, arm, aarch64. (must be architecture dependent)
- App must have `help` with usage examples.

- Graded output: source code with report including screenshots. (in PDF)

Acceptance criteria

- **A (20 points) –** app meets all listed criteria.
- **B (15-19 points)** – minor issues (for ex. No help for app, no directory configuration).
- **C (10-14 points)** – major issues (for ex. App can work only with one arch or do not care about arches).

Output example

```
Report on dynamic used libraries by ELF executables on /home

---------- i386 (x86) ----------

libc.so.0.1 (1 execs)

            -> /home/inno/QEMU/buildroot-2022.02.1/output/build/host-patchelf-0.9/tests/no-rpath-prebuild/no-rpath-kfreebsd-i386

libc.so.0.3 (1 execs)

            -> /home/inno/QEMU/buildroot-2022.02.1/output/build/host-patchelf-0.9/tests/no-rpath-prebuild/no-rpath-hurd-i386

libc.so.6 (1 execs)

            -> /home/inno/QEMU/buildroot-2022.02.1/output/build/host-patchelf-0.9/tests/no-rpath-prebuild/no-rpath-i386

------------ x86-64 ------------

libc.so.6 (681 execs)

            -> /home/inno/QEMU/buildroot-2022.02.1/output/build/host-gmp-6.2.1/gen-psqr

            -> /home/inno/QEMU/buildroot-2022.02.1/output/build/host-gmp-6.2.1/gen-fib

            -> /home/inno/QEMU/buildroot-2022.02.1/output/build/host-gmp-6.2.1/gen-trialdivtab

            -> /home/inno/QEMU/buildroot-2022.02.1/output/build/host-gmp-6.2.1/gen-fac

            -> /home/inno/QEMU/buildroot-2022.02.1/output/build/host-gmp-6.2.1/gen-bases

            -> /home/inno/QEMU/buildroot-2022.02.1/output/build/host-gmp-6.2.1/gen-jacobitab
```

Thanks for your attention!

About US

Open Mobile Platform, LLC

Shortly:

- Founded in 2016
- Offices in Moscow, Innopolis and St.Petersburg
- 200+ qualified IT specialists

Main products:

- OS Aurora + Aurora SDK
- Cloud Platform
  Aurora Center (Enterprise Mobility Management)
- Aurora TEE