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cs-35l / assignment4 / lab4.txt

 prithvikannan added to lab4 and fixed comment is sfrob

ffd6308 on Oct 28

1 contributor

Raw Blame History

87 lines (76 sloc) 3.38 KB

```
wget https://web.cs.ucla.edu/classes/fall19/cs35L/assign/
coreutils-with-bug.tar.gz
    Download the bad version of coreutils
tar -xzvf coreutils-with-bug.tar.gz
    Unzip the files

mkdir ~/badCoreutils
    Make a folder to install the bad coreutils version

./coreutils-with-bug/configure --prefix=/u/ee/ugrad/prithvik/badCoreutils
    install the bad coreutils in the folder we made

make
make install
    Got this error message since futimens is being redeclared:
    error: conflicting types for 'futimens'
    int futimens (int, char const *, struct timespec const [2]);
        ^

wget https://web.cs.ucla.edu/classes/fall19/cs35L/assign/coreutils.diff
    Grab the patch to fix this issue

cd coreutils-with-bug
    Navigate to coreutils directory
mv ../coreutils.diff .
    Move the patch file from assign4 to the coreutils directory
patch --strip=0 < coreutils.diff OR patch -p0 < coreutils.diff
    Apply the patch with the --strip flag to strip the smallest prefix with 0
    leading slashes from each file name in the patchfile.
make
    Tried to run make but it failed since I needed to run configure again
./configure --prefix=/u/ee/ugrad/prithvik/badCoreutils
    Ran configure again
make
    Ran make with no bugs this time

cd ~/badCoreutils
    Navigated to where I installed the coreutils
tmp=$(mktemp -d)
cd $tmp
touch -d '1918-11-11 11:00 GMT' wwi-armistice-cs35L
touch now
sleep 1
touch now1
TZ=UTC0 ~/badCoreutils/bin/ls -lt --full-time wwi-armistice-cs35L now now1
    Followed the steps given in the lab to replicate the error using the
    bad coreutils ls function.
    The output is as follows:
    -rw-r--r-- 1 prithvik eeugrad 0 1918-11-11 11:00:00.000000000 +0000 wwi-armistice-cs35L
    -rw-r--r-- 1 prithvik eeugrad 0 2019-10-23 22:48:35.545821118 +0000 now1
    -rw-r--r-- 1 prithvik eeugrad 0 2019-10-23 22:48:27.276526887 +0000 now
```

```
52
53  cd ~
54  mkdir tmp
55  cd tmp
56  touch -d '1918-11-11 11:00 GMT' wwi-armistice-cs35L
57  touch now
58  sleep 1
59  touch now1
60  TZ=UTC0 ls -lt --full-time wwi-armistice now now1
61      I attempted to reproduce the error using my home directory instead of the
62      $tmp directory. Using the same test case as above, I ran into a different
63      issue with ls. wwi-armistice shows up with a timestamp of 2054-12-17 even
64      though I ran the touch -d command with 1918-11-11. This is due to the epoch
65      time so everything dated before 1970 wil wrap around.
66      The output is as follows:
67      -rw-r--r-- 1 prithvik eeugrad 0 2054-12-17 17:28:16.000000000 +0000 wwi-armistice-cs35L
68      -rw-r--r-- 1 prithvik eeugrad 0 2019-10-23 22:53:53.521649000 +0000 now1
69      -rw-r--r-- 1 prithvik eeugrad 0 2019-10-23 22:53:46.634002000 +0000 now
70
71  Using gdb, I traced the code and found that the error was in the timespec.h
72  file, specifically in the function timespec_cmp where there was overflow.
73
74  emacs timespec.h
75  C-x 4 a
76      Then I opened the timespec.h file and updated the changelog with the
77      modification with the following text:
78          Fixed the comparator for timespec_cmp by eliminating overflow
79          created by difference and replacing with comparison. First check if one is greater
80          then check if other is greater, and only if they are equal look at nanoseconds.
81      and replaced the lines:
82          int diff = a.tv_sec - b.tv_sec;
83          return diff ? diff : a.tv_nsec - b.tv_nsec;
84      with the line:
85          return (a.tv_sec > b.tv_sec) ? 1 : (a.tv_sec < b.tv_sec) ? -1 : a.tv_nsec - b.tv_nsec;
86
87
```