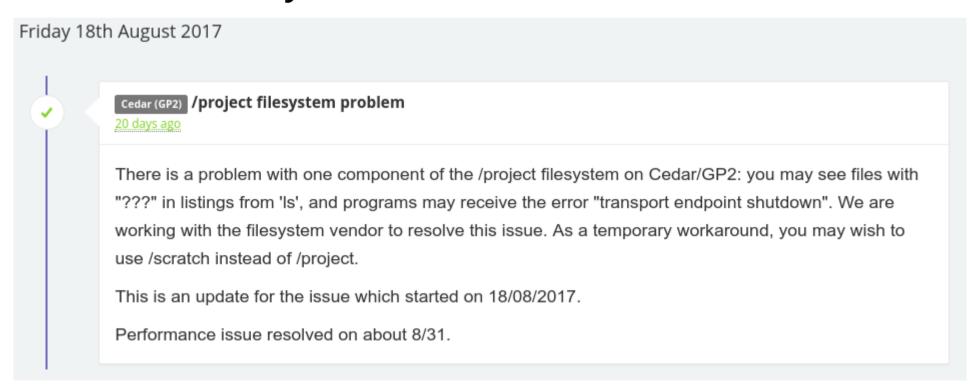# Progress Update

Trevor Towstego
UofT Neutrino/DM Meeting
September 7, 2017

Current Status of Aluminum Sourcing

- Philip and Robert managed to find enough aluminum pipe for prototyping from a different company

  – However, this company will not be able to meet full production requirements

- They also said we should forgo the stainless steel option

  – Contacted a few companies – at least one seems to be able to work with us

- Kaiya Aluminum recommended we change our dimensions to 20 mm thickness for the extrusion

  – Might be okay, but will have to wait and see how prototyping goes

Some notes on Cedar

- /project file system issue is now resolved – moved back to working in the group-writable T2K directory

Friday 18th August 2017

✓ **Cedar (GP2)** **/project filesystem problem**
20 days ago

There is a problem with one component of the /project filesystem on Cedar/GP2: you may see files with "???" in listings from 'ls', and programs may receive the error "transport endpoint shutdown". We are working with the filesystem vendor to resolve this issue. As a temporary workaround, you may wish to use /scratch instead of /project.

This is an update for the issue which started on 18/08/2017.

Performance issue resolved on about 8/31.

Status of Installations on Cedar

- Reminder: CLHEP and ROOT 5.34.23 have been successfully installed on Cedar

- CERNLIB installation error:

```
/tmp/imake7XNiJl: relocation error: /tmp/../lib64/libc.so.6: symbol _dl_starting_up, version GLIBC_PRIVATE not defined in file ld-linux-x86-64.so.2 with link time reference
/home/towstego/scratch/cernlib/2005/src/config/imake_boot: line 17: 93395 Aborted            imake -DUseInstalled -I$CVSCOSRC/config -DTOPDIR=`/bin/pwd` -DCURDIR= -f$CVSCOSRC/Imakefile
```

  - ld-linux-x86-64.so.2 doesn't match version of glibc that installation is trying to use

  - resolved by changing environment variable TMPDIR to /home/towstego/scratch/tmp

Status of Installations on Cedar

- I thought CERNLIB 2005 was working, so I moved on to skofl and atmpd

- atmpd installation error:

```
gmake[4]: Entering directory `/scratch/towstego/atmpd/src/recon/fitqun'
./mkfqcore fitqun_shared
gmake[4]: *** [fqcrmk] Segmentation fault
gmake[4]: Leaving directory `/scratch/towstego/atmpd/src/recon/fitqun'
```

  – fixed by replacing /usr/ with $NIXUSER_PROFILE/ in mkfqcore and mkfqcore.mac

Status of Installations on Cedar

- atmpd installation error:

```
gfortran -c -g -O -finit-local-zero -fno-backslash -fno-automatic -fno-second-underscore -ffixed-line-length-132 -fdollar-ok -fpic  -I/home/towstego/project
/project/6003227/group_writable/T2K/atmpd/src/neut/neutflux/nerdnetarg.F:16:0: fatal error: rscons.h: No such file or directory
 #include "rscons.h"
  ^
compilation terminated.
gmake[4]: *** [nerdnetarg.o] Error 1
gmake[4]: Leaving directory `/project/6003227/group_writable/T2K/atmpd/src/neut/neutflux'
```

- – forgot to install neut first!

- neut installation error:

```
/project/6003227/group_writable/T2K/neut/src/neutsmpl/../neutsmpl/bin/imake_boot: line 59: imake: command not found
```

- – run ./Makeneutsmpl.csh instead of the default ./Makeneutsmpl

Status of Installations on Cedar

- neut installation error:

```
gfortran -pedantic-errors -Wall -W -w -Wunused -Wuninitialized -DstrictF77 -fno-backslash -fno-automatic -fno-second-underscore -ffixed-line-length-132 -fdo
/cvmfs/soft.computecanada.ca/nix/store/a7yw0kypdbdd6ka490x01pqglcz1j2kd-binutils-2.28/bin/ld: cannot find -lpawlib
/cvmfs/soft.computecanada.ca/nix/store/a7yw0kypdbdd6ka490x01pqglcz1j2kd-binutils-2.28/bin/ld: cannot find -lpacklib
/cvmfs/soft.computecanada.ca/nix/store/a7yw0kypdbdd6ka490x01pqglcz1j2kd-binutils-2.28/bin/ld: cannot find -lmathlib
/cvmfs/soft.computecanada.ca/nix/store/a7yw0kypdbdd6ka490x01pqglcz1j2kd-binutils-2.28/bin/ld: cannot find -lgraflib
/cvmfs/soft.computecanada.ca/nix/store/a7yw0kypdbdd6ka490x01pqglcz1j2kd-binutils-2.28/bin/ld: cannot find -lkernlib
collect2: error: ld returned 1 exit status
make: *** [Makefile:50: makeTables] Error 1
```

- – CERNLIB wasn't installed properly!
- – libraries don't seem to be in cernlib/2005/lib

Status of Installations on Cedar

- Looking at CERNLIB log files more carefully, found the error:

```
kuipc /home/towstego/project/group_writable/T2K/cernlib/2005/src/packlib/cspack/programs/zftp/zftpcdf.cdf zftpcdf.c
gmake[3]: kuipc: Command not found
gmake[3]: *** [zftpcdf.c] Error 127
  - error could come from this, found in cernlib/2005/build/log/kuipc:
gcc -O1 -fomit-frame-pointer -fPIC    -I/project/6003227/group_writable/T2K/cernlib/2005/build/packlib/kuip -I/home/towstego/project/group_writable/T2K/cern
In file included from /cvmfs/soft.computecanada.ca/nix/var/nix/profiles/16.09/include/string.h:630:0,
                 from /home/towstego/project/group_writable/T2K/cernlib/2005/src/packlib/kuip/kuip/kstring.h:13,
                 from /home/towstego/project/group_writable/T2K/cernlib/2005/src/packlib/kuip/kuip/kuip.h:10,
                 from /home/towstego/project/group_writable/T2K/cernlib/2005/src/packlib/kuip/programs/kuipc/kuipcc.c:46:
/cvmfs/soft.computecanada.ca/nix/var/nix/profiles/16.09/include/bits/string2.h:346:4: error: expected identifier or '(' before '__extension__'
    (__extension__ (__builtin_constant_p (s) && __string2_1bptr_p (s)         \
     ^
/cvmfs/soft.computecanada.ca/nix/var/nix/profiles/16.09/include/bits/string2.h:365:26: note: in expansion of macro '__strndup'
 #   define strndup(s, n) __strndup (s, n)
                          ^
/home/towstego/project/group_writable/T2K/cernlib/2005/src/packlib/kuip/kuip/kstring.h:51:14: note: in expansion of macro 'strndup'
 extern char* strndup( const char* buf, size_t n );
              ^
gmake[4]: *** [kuipcc.o] Error 1
```

- – Issue with string2.h header? Sent email to support@computecanada.ca... hopefully will hear back soon

Goals

- Want to finish installing skofl/atmpd by this Monday

    - Hopefully, cernlib will be only major barrier aside from standard /usr/ -> $NIXUSER_PROFILE/ changes...

- Will move onto Geant4/WCSim afterwards, and then back to other work...