Troubleshooting

This page lists some common problems that users can have in trying to run CAM-chem.

If you don't find an answer here, there may be some guidance on the CAM-chem forum, where you can also ask a question: https://bb.cgd.ucar.edu/cesm/forums/cam-chem.154/

(1) Build error - case name

```
ERROR: No default value found for case_name.
```

There are several reasons this may occur:

- Check if you included “--mach cheyenne” option when you created the new case.
- Make sure your `$CASENAME` does not have a slash ("/") at the end of the full path.

(1a) Build error - output path name in clone case

The build fails after trying to build mct.

```
ERROR: *buildlib.mct FAILED
```

A cat of the mct.bldlog.* will show an error:

```
ERROR: cat: Filepath: No such file or directory
```

- Make sure your call to `--cime-output-root <your_output_path>` does not have a slash ("/") at the end of the full path.

(2) Build error - freezing

The build will hang on the command:

```
...calling cam buildcpp to set build time option
```

Cancel the build and try the command

```
>./preview_namelists
```

and if the same freeze occurs then the problem is most likely within the namelist definition file (`user_nl_cam`). Make sure all the commas and quote marks are there. Sometimes, if the `user_nl_cam` file has been opened in Notepad or another text editor, auto-formatting can change the formatting of some symbols, such as quote marks (e.g. Word automatically changes straight quote marks to curly quote marks).

(3) Build error - coupling definition

During the model build the following error occurs:

```
...
 Calling /gpfs/fs1/work/fvitt/cesm/cesm2.1-exp003_O3S/components/mosart//cime_config/buildnml
Invalid values ['10800.0']
ERROR: Variable 'coupling_period' has invalid value ['10800.0'].
```

This occurs when using Python 3 rather than Python 2. Module load python2.7.X and clean build.

(4) Build error - fail with 'isalnum'

During the model build the following error occurs:

```
error: call to undeclared library function 'isalnum' with type 'int (int)'; ISO C99 and later do not support
implicit function declarations [-Wimplicit-function-declaration]
```

To address this error went into: `$CESM_ROOT/components/cism/source_cism/libglimmer/`

Opened: `writestats.c` and added the line:

```
#include <ctype.h>
```

to the include header section. The case was set up again and subsequently built and ran successfully.

> This error was addressed in the discussion board comments:
> https://bb.cgd.ucar.edu/cesm/threads/installing-cesm2-on-perlmutter.8488/
> https://bb.cgd.ucar.edu/cesm/threads/cism-buildlib-failed-for-cesm2-1-4-on-derecho.8543/

(5) Submit error - files missing

Cloning and creating a branch is complete but the following error occurs:

```
ERROR: Could not find all inputdata on any server
```

a) Check all your paths for input and emissions definitions (e.g. make sure there a re no missing forward slashes).

b) [Clone only] Check your restart files have been copied to the output run folder, and that they are the same date as the RUN_REFDATE

c) [Clone only] Make sure initialization files are not defined in the `user_nl_cam` or `user_nl_clm` files (i.e. remove those lines if they are there).

(6) Run error - model crash due to MPT error (not relevant anymore)

With a recent update to the MPT system on cheyenne during March 2019, the `env_mach_specific.xml` file needs to be updated. Otherwise you will be able to submit, but will find the simulation crashes with this error in the `cesm.log.XXX` file:

```
MPT ERROR: invalid option -p
        (HPE MPT 2.19  12/07/18 05:32:16
```

To correct the error copy the file:

/gpfs/u/home/tilmes/code/cesm2/fix_mpt/env_mach_specific.xml

to your case directory, then reset and recompile.

```
>./case.setup --reset
>./case.build --clean
>./case.build
```

(7) Run error - model crash due to dry deposition

```
(seq_drydep_read) Read in drydep_inparm namelist from: drv_flds_in
 ERROR: (seq_drydep_read) ERROR: encountered end-of-file on namelist read
```

This error occurs when you add a gas species and make it to be dry deposited by adding the species name into 'drydep_list' in '&drydep_inparm', but you don't modify seq_drydep_mod.F90. See instructions on https://wiki.ucar.edu/display/camchem/Updating+Gas-Phase+Chemistry

(8) Run error - model crash past 2016

To run past 2016 you will need to make sure the correct sea ice specification is called. Edit in `env_run.xml`:

```
<entry id="SSTICE_DATA_FILENAME" value="/gpfs/fs1/work/tilmes/inputdata/sst/sst_HadOIBl_bc_0.9x1.
25_1850_2018_c170928.nc">
<entry id="SSTICE_YEAR_END" value="2018">
```

and of course ensure all your emissions and meteorology files cover the dates you require.

To use the latest 0.9 x 1.25 SSTICE file, edit env_run.xml:

```
<entry id="SSTICE_DATA_FILENAME" value="/glade/work/tilmes/inputdata/sst/sst_HadOIBl_bc_0.9x1.
25_1850_2020_c200104.nc">
<entry id="SSTICE_YEAR_END" value="2020">
```

Which repeats 2018 SSTs for 2019 and 2020.

(9) Run error - model crash due to rpointer.drv file check

```
(seq_infodata_Init) read rpointer file rpointer.drv
(seq_infodata_Init) restart file from rpointer= str_undefined
(seq_io_read_openfile) ERROR: file invalid str_undefined
ERROR: Unknown error submitted to shr_abort_abort.
```

This error occurs when your env_run.xml file has CONTINUE_RUN="TRUE" with RUN_TYPE="startup" or "hybrid" accidentally.

To correct it, change CONTINUE_RUN variable to "FALSE"

```
>./xmlchange CONTINUE_RUN=FALSE
```

(10) Run error - model crash due to meteorology defintion issues

The model freezes after or during reading in the LBC file. The `atm.log.*` file gives an error such as:

```
 (GETFIL): attempting to find local file
 ^@^@^@^@^@^.............
 (GETFIL): all tries to get file have been unsuccessful:
 ^@^@^@^@^@^.............
 ERROR:
 GETFIL: FAILED to get ^@^@^@^@^@.........
```

Make sure your meteorology nudging style is consistent - i.e. you are calling Specified Dynamics everywhere or Physics-based nudging everywhere. The specific error above occurred when creating a new case with the FCnudged compset, but changing CAM_CONFIG_OPTS='-phys cam6 -chem trop_strat_mam4_vbs -age_of_air_trcs -offline_dyn -nlev 32'. Instead, it should be left at: CAM_CONFIG_OPTS: -phys cam6 -chem trop_strat_mam4_vbs -age_of_air_trcs.

(10) NetCDF file version error (as of CESM2.2, may be solved in future versions)

If you provide emissions or any input files in NetCDF version 4 (either NetCDF4 or NetCDF4_classic), the model will crash.

If you are lucky, the model will raise an error something like this on the log file:

```
"NetCDF: Attempt to use feature that was not turned on when netCDF was built"
```

However, there is a good chance that you will have no error messages, so just keep in mind this when you provide new NetCDF files to CESM. To determine the versions of your NetCDF files, use ncdump with the option "-k"

```
ncdump -k filename.nc
```

Version 3 will be described as "classic". If your files are not version 3, in this case, you have to convert NetCDF4 files to NetCDF3 files using "nccopy" or "ncks" command. Any NetCDF3 file format should work fine (classic, 64bit_offset, 64bit_data, and cdf5), just pick one of these that you would like to use.

```
ncks --fl_fmt=classic oldfile newfile # netCDF3 classic
ncks --fl_fmt=64bit_offset oldfile newfile # netCDF3 64bit-offset
ncks --fl_fmt=64bit_data oldfile newfile # netCDF3 64bit-data
ncks --fl_fmt=cdf5 oldfile newfile # netCDF3 64bit-data

or use nccopy (sometimes this method doesn't work, try "ncks" in that case):
nccopy -k cdf5 oldfile newfile
```