**How-to: running the physical component of COBALT**

*This is a live document that will be updated as needed.*

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**### Script modifications ###**

1. nano roms\_config.sh
   * Change ROMS\_SRC = [current directory]. All else stays the same.
2. nano hioekg.h
   * At this stage (getting only the physical model to run), no changes. Eventually, I can include COBALT specifics.
3. rmake -j2
   * This creates /build directory. If I want to change the source code, I can do that in /build, then go to the main directory and run rmake -j2 to recompile.
   * oceanM\* is the executable file that is created.
   * varinfo.dat is also created.
4. ocean.in
   * If changed, I don’t need to recompile using rmake -j2.
   * In this file, I tell the model where to find the starting NetCDF files:
     1. GRDNAME: Change pathway to hioekg-grid.nc
     2. ININAME: Change pathway to ini-his-##.nc. Note that the initialization file must contain the keyword “his”, or the script won’t be able to find it- this is an inherent ROMS oddity.
     3. BRYNAME: Change pathway to hioekg-bry.nc, the boundary conditions file.
     4. CLMNAME: Change pathway to hioekg-clim-##.nc, the climatology file.
     5. SSFNAME: Change pathway to river-hioekg.nc, the sources/sinks file.
     6. TIDENAME: Change pathway to hioekg-tide.nc, the tidal forcing file.
     7. FRCNAME: Change pathway to frc-wrfo.nc, the forcing file. Note that I can change NFFILES = #, located a few lines above, to point to multiple forcing files. This will happen later, when COBALT is run.
     8. DSTART: Change to match the ## on ini-his-##.nc.
        1. Presently, day2date.sh and date2day.sh are in /nest. These scripts translate dates and days. Example: date2day.sh 2011 1 1 → ## (translates to a day).
     9. TIDESTART: Change to match ## sourced from ncdump -h ./ncfiles/hioekg-tide.nc.
     10. NTIMES = # of timesteps = # of seconds in your timeframe (= 86,400 \* # days)/DT (seconds per step).
     11. NHIS: How often output is written in # seconds (ex: 360 = every hour).
     12. NtileI, NtileJ: Set at 8 and 8. Related to the number of cores used to run the model.
5. spinup.sh
   * More powerful than (can overwrite) ocean.in.
     1. ROMS\_START\_DAY: Change to match the ## on ini-his-##.nc.
     2. ROMS\_END\_DAY: Change to end day (n = number of run days; end day = start + n-1. Example: start day = 4018, end day = 4020, n = 3).
     3. ROMS\_RUN\_DAYS: Change to n.
     4. ROMS\_QUEUE\_NAME: Change to default.
     5. ROMS\_QUEUE: Change to match NtileI, NtileJ.
     6. ROMS\_RUN\_NAME: Ensure there are no spaces!
     7. ROMS\_FAIL\_INPUT: In case of failure, I can name a backup file. For now, left empty.

**### Running the model ###**

1. Copy the ini-his-##.nc file to /output. cycle\_roms will look for it there.
2. Dry run: cycle\_roms -d spinup.sh ...in /work, this command creates…
   * ini.nc: restart file, copied by the model from /output. The model will automatically change the dates, etc. according to specified cycle conditions.
   * irp.nc: ignore.
   * ocean.in: copied here, with automatically changed dates according to our pre-specified conditions.
   * varinfo.dat
3. If no dry run errors: cycle\_roms spinup.sh
4. qstat
   * Did it crash? Check run log in /work
   * If it crashed, rm -r work and rm -r HIOEKG\_TESTING\*