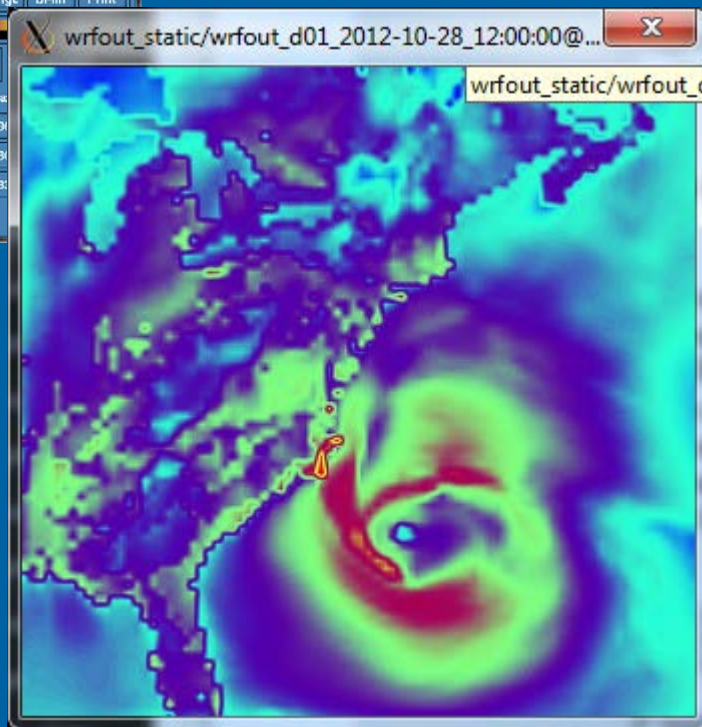
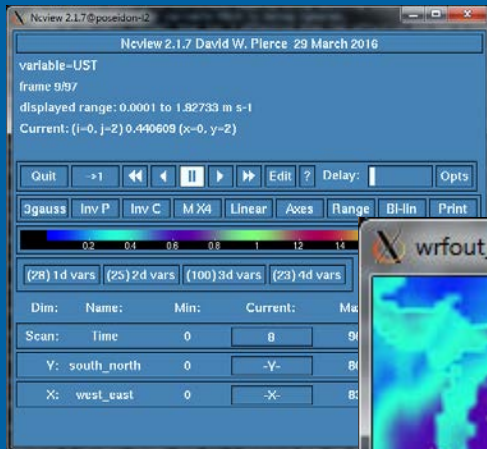


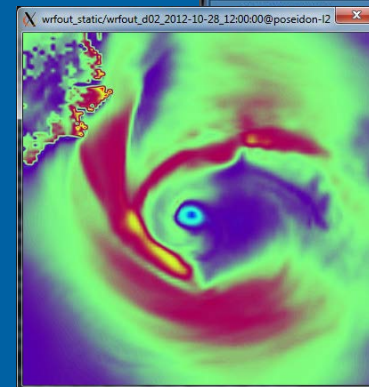
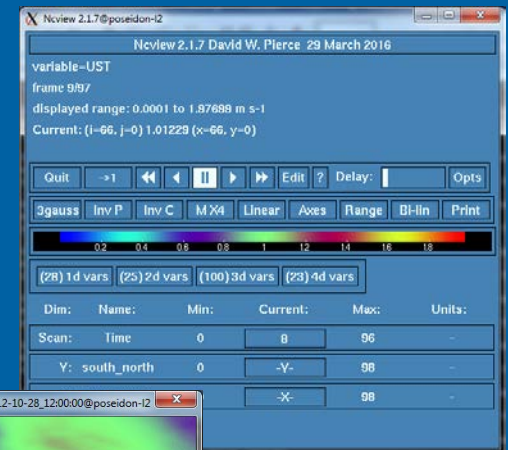
# WRF Application in COAWST

Hurricane Sandy – Static Nest  
Oct 2012

*Monday afternoon 29=00~*

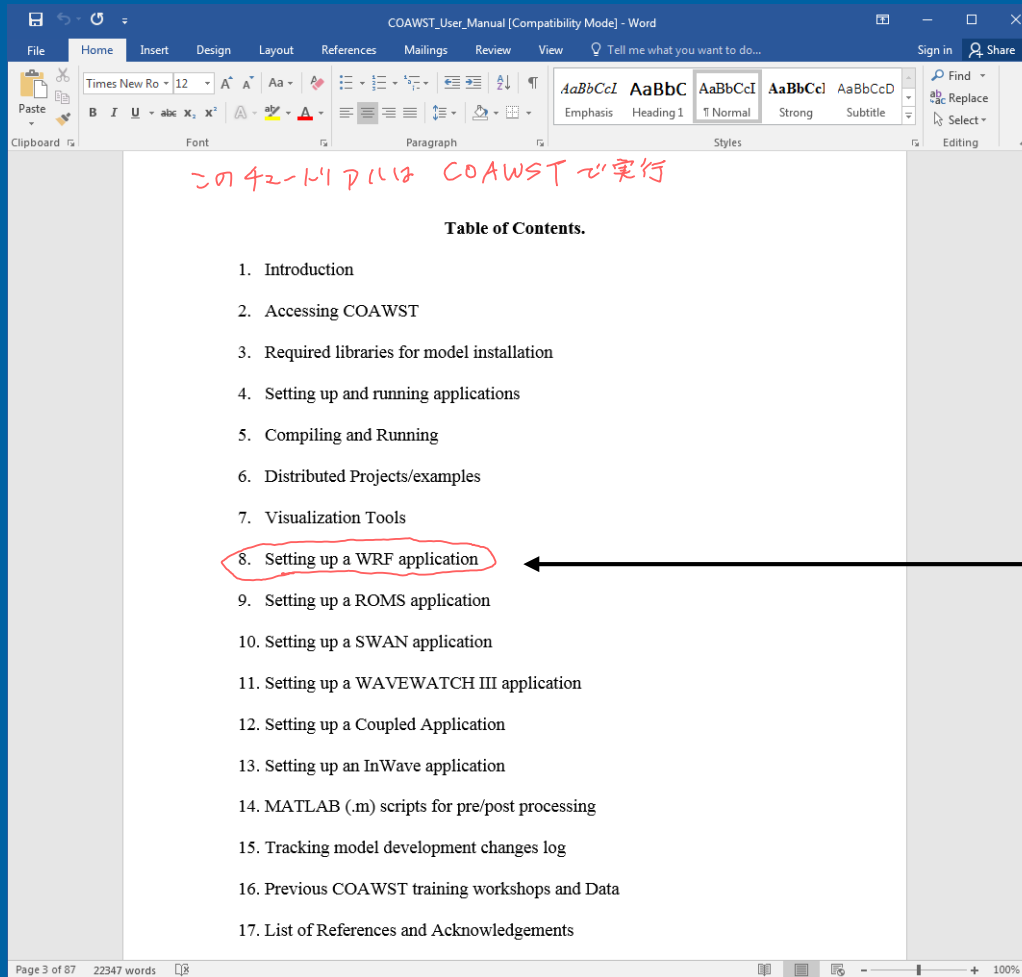


Domain 01



Domain 02

# COAWST User Manual



We use H Sandy application as an example for Chapter 8.

# WRF Application: Hurricane Sandy

## Main Steps:

- 1) Build WRF
- 2) Build WPS
- 3) Geogrid
- 4) Ungrib
- 5) Metgrid
- 6) Real.exe
- 7) Run wrf.exe [coawst.exe]
- 8) Visualize Output

# 1) Build WRF - sandy.h

```
/*
** svn $Id: sandy.h 25 2007-04-09 23:43:58Z jcwarnar $
** Copyright (c) 2002-2007 The ROMS/TOMS Group
** Licensed under a MIT/X style license
** See License_ROMS.txt
**
** Options for Sandy Test.
**
** Application flag: SANDY
**
#define WRF_MODEL
```

← comments

← commands

- Determine an application name, let's use SANDY
- Therefore, the header file needs to be named: sandy.h
- Create a file called sandy.h and add #define WRF\_MODEL.
- save the file in a folder, let's use Projects/Sandy

# 1) Build WRF - coawst.bash

very complicated to allow flexibility, but just need to change a few key things.

```
TextPad - C:\work\models\COAWST\coawst.bash *
File Edit Search View Tools Macros Configure Window Help
coawst.bash * x
# Set the CPP option defining the particular application. This will
# determine the name of the ".h" header file with the application
# CPP definitions.

export COAWST_APPLICATION=SANDY

# Set the ROMS_APPLICATION to be the same as the COAWST_APP. We use the COAWST
# APP for other checks.
export ROMS_APPLICATION=${COAWST_APPLICATION}

# Set a local environmental variable to define the path to the directories
# where all this project's files are kept.

export MY_ROOT_DIR=/cygdrive/c/work/models/COAWST
export MY_PROJECT_DIR=${MY_ROOT_DIR}

# The path to the user's local current ROMS source code.
#
# If using svn locally, this would be the user's Working Copy Path (WCPATH).
# Note that one advantage of maintaining your source code locally with svn
# is that when working simultaneously on multiple machines (e.g. a local
# workstation, a local cluster and a remote supercomputer) you can checkout
# the latest release and always get an up-to-date customized source on each
# machine. This script is designed to more easily allow for differing paths
# to the code and inputs on differing machines.

export MY_ROMS_SRC=${MY_ROOT_DIR}/
```

← App name

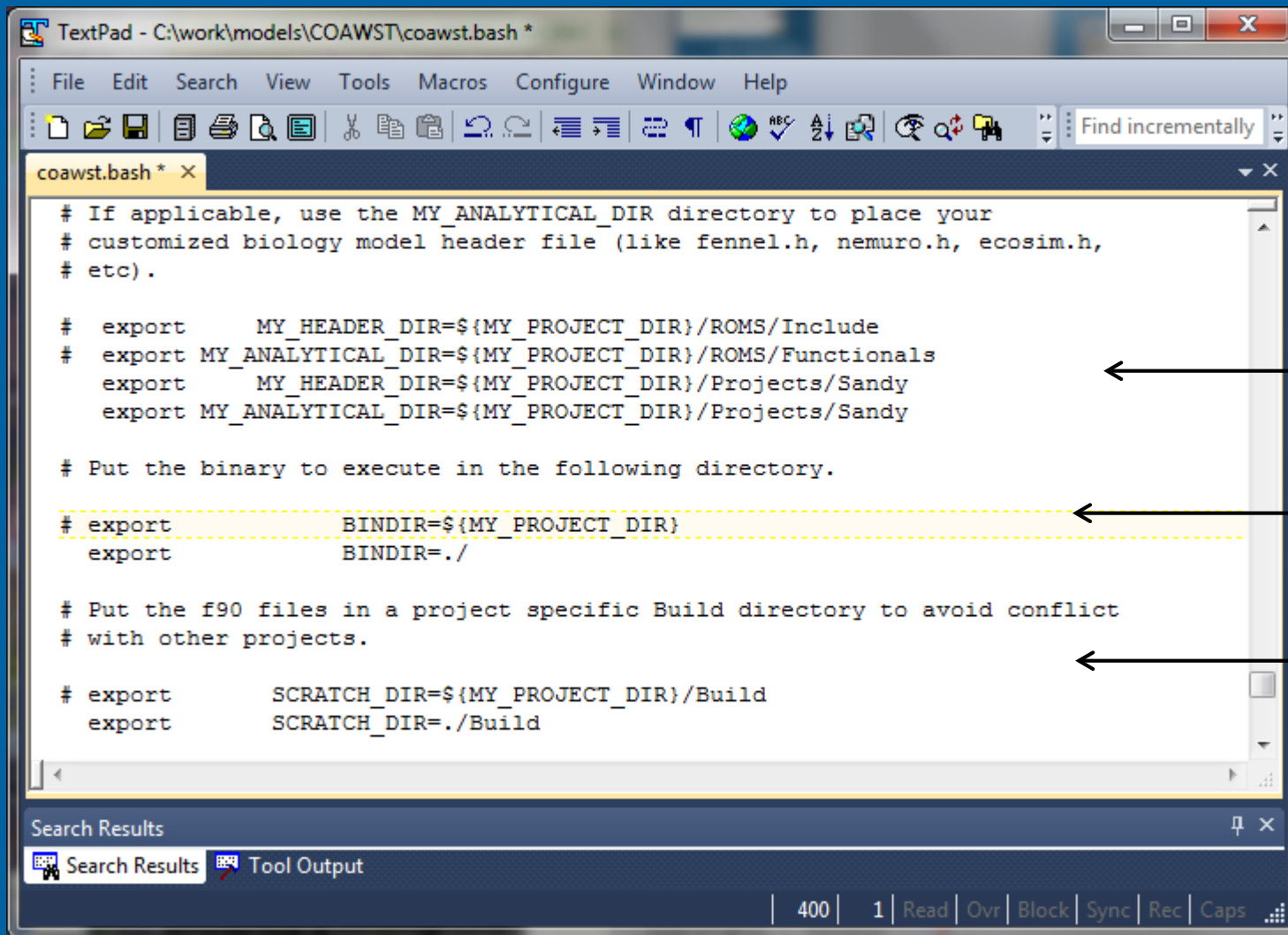
← root dir to base other  
names on

← where are your  
project files

← where is the source  
code

# 1) Build WRF - coawst.bash

very complicated to allow flexibility, but just need to change a few key things.



```
# If applicable, use the MY_ANALYTICAL_DIR directory to place your
# customized biology model header file (like fennel.h, nemuro.h, ecosim.h,
# etc) .

# export MY_HEADER_DIR=${MY_PROJECT_DIR}/ROMS/Include
# export MY_ANALYTICAL_DIR=${MY_PROJECT_DIR}/ROMS/Functionals
export MY_HEADER_DIR=${MY_PROJECT_DIR}/Projects/Sandy
export MY_ANALYTICAL_DIR=${MY_PROJECT_DIR}/Projects/Sandy

# Put the binary to execute in the following directory.
# export BINDIR=${MY_PROJECT_DIR}
export BINDIR=./

# Put the f90 files in a project specific Build directory to avoid conflict
# with other projects.
# export SCRATCH_DIR=${MY_PROJECT_DIR}/Build
export SCRATCH_DIR=./Build
```

← where is the \*.h file

← where \*.exe is placed

← Build dir

# 1) Build WRF – command prompt

```
jcwarner@nemo: /raid1/jcwarner/Projects/help_cases/COAWST_train
echo ""
echo "----- Finished compiling WRF -----"
cp: cannot stat './coawstS': No such file or directory
arch      dyn_em  frame  phys      README.rsl_output  run
clean     dyn_exp inc      README      README_test_cases  share
compile   dyn_nmm  main    README.io_config  README.VAR          test
configure external Makefile  README.NMM      Registry           tools

Compiling wrf
checking for perl5... no
checking for perl... found /usr/bin/perl (perl)
Will use NETCDF in dir: /share/apps/netcdf
PHDF5 not set in environment. Will configure WRF for use without.
$JASPERLIB or $JASPERINC not found in environment, configuring to build without grib2 I/O...
-----
Please select from among the following supported platforms.

 1. Linux x86_64, PGI compiler with gcc (serial)
 2. Linux x86_64, PGI compiler with gcc (smpar)
 3. Linux x86_64, PGI compiler with gcc (dmpar)
 4. Linux x86_64, PGI compiler with gcc (dm+sm)
 5. Linux x86_64, PGI accelerator compiler with gcc (serial)
 6. Linux x86_64, PGI accelerator compiler with gcc (smpar)
 7. Linux x86_64, PGI accelerator compiler with gcc (dmpar)
 8. Linux x86_64, PGI accelerator compiler with gcc (dm+sm)
 9. Linux x86_64 i486 i586 i686, ifort compiler with icc (serial)
10. Linux x86_64 i486 i586 i686, ifort compiler with icc (smpar)
11. Linux x86_64 i486 i586 i686, ifort compiler with icc (dmpar)
12. Linux x86_64 i486 i586 i686, ifort compiler with icc (dm+sm)
13. Linux i486 i586 i686 x86_64, PathScale compiler with pathcc (serial)
14. Linux i486 i586 i686 x86_64, PathScale compiler with pathcc (dmpar)
15. x86_64 Linux, gfortran compiler with gcc (serial)
16. x86_64 Linux, gfortran compiler with gcc (smpar)
17. x86_64 Linux, gfortran compiler with gcc (dmpar)
18. x86_64 Linux, gfortran compiler with gcc (dm+sm)
19. Cray XT CLE/Linux x86_64, PGI compiler with gcc (serial)
20. Cray XT CLE/Linux x86_64, PGI compiler with gcc (smpar)
21. Cray XT CLE/Linux x86_64, PGI compiler with gcc (dmpar)
22. Cray XT CLE/Linux x86_64, PGI compiler with gcc (dm+sm)
23. Cray XT CLE/Linux x86_64, Cray CCE compiler with gcc (serial)
24. Cray XT CLE/Linux x86_64, Cray CCE compiler with gcc (smpar)
25. Cray XT CLE/Linux x86_64, Cray CCE compiler with gcc (dmpar)
26. Cray XT CLE/Linux x86_64, Cray CCE compiler with gcc (dm+sm)

Enter selection [1-26] : 3
-----
Compile for nesting? (1=basic, 2=preset moves, 3=vortex following) [default 1]: 1
```

cd to where the coawst.bash file is located.

at the command prompt type:  
./coawst.bash

follow the WRF prompts....

3 – pick what is on your system !

When coupled:

Always use dmpar (=distributed mem parallel).

Do not use smpar (= shared mem parallel).

1 – basic nesting



# 1) Build WRF – coawstM = wrf.exe

```
jcwerner@nemo: /raid1/jcwerner/Projects/help_cases/COAWST_train
( cd run ; /bin/rm -f tc.exe ; ln -s ../main/tc.exe . )
( cd run ; /bin/rm -f ndown.exe ; ln -s ../main/ndown.exe . )
( cd run ; /bin/rm -f nup.exe ; ln -s ../main/nup.exe . )
( cd run ; if test -f namelist.input ; then \
    /bin/cp -f namelist.input namelist.input.backup ; fi ; \
    /bin/rm -f namelist.input ; ln -s ../test/em_real/namelist.input . )
build started: Tue Jul 10 11:31:45 EDT 2012
build completed: Tue Jul 10 13:59:59 EDT 2012
make[1]: Leaving directory `/raid1/jcwerner/Projects/help_cases/COAWST_train/WRF'

----- Finished compiling WRF -----
ln -sf WRF/main/wrf.exe coawstM;
echo "";

makefile:231: INCLUDING FILE ./Build/make_macros.mk WHICH CONTAINS APPLICATION-DEPENDENT MAKE
DEFINITIONS
make: `Build' is up to date.
jcwerner@nemo: /raid1/jcwerner/Projects/help_cases/COAWST_train$ xemacs /raid2/jcwerner/Projec
ts/SouthCar/sim105/inputs/south_car.h&
[2] 32048
jcwerner@nemo: /raid1/jcwerner/Projects/help_cases/COAWST_train$ Warning: Missing charsets in
String to FontSet conversion

[2]+ Done xemacs /raid2/jcwerner/Projects/SouthCar/sim105/inputs/south_ca
r.h
jcwerner@nemo: /raid1/jcwerner/Projects/help_cases/COAWST_train$ ls -ltr
total 2340
-rwxr-xr-x 1 jcwerner jcwerner 198 2009-02-01 10:20 run_pikmin
-rwxr-xr-x 1 jcwerner jcwerner 1498368 2009-02-24 15:58 RRTM_DATA_DBL
-rwxr-xr-x 1 jcwerner jcwerner 749248 2009-02-24 15:58 RRTM_DATA
-rwxr-xr-x 1 jcwerner jcwerner 11511 2009-08-07 21:14 VEGPARM.TBL
-rwxr-xr-x 1 jcwerner jcwerner 4417 2009-08-07 21:14 SOILPARM.TBL
-rwxr-xr-x 1 jcwerner jcwerner 15022 2009-08-07 21:14 LANDUSE.TBL
drwxr-xr-x 16 jcwerner jcwerner 4096 2010-05-11 22:55 ROMS
drwxr-xr-x 4 jcwerner jcwerner 30 2010-05-11 22:55 Tools
drwxr-xr-x 4 jcwerner jcwerner 31 2010-05-11 22:55 SWAN
drwxrwxr-x 3 jcwerner jcwerner 17 2010-05-11 22:55 Data
drwxrwxr-x 7 jcwerner jcwerner 4096 2011-03-07 16:11 WPS
-rwxrwxr-x 1 jcwerner jcwerner 8528 2011-05-17 15:25 URBPARM.TBL
-rwxrwxr-x 1 jcwerner jcwerner 261 2011-05-17 15:25 GENPARM.TBL
-rwxrwxr-x 1 jcwerner jcwerner 622 2011-07-15 09:15 run_nemo-
-rwxrwxr-x 1 jcwerner jcwerner 16138 2011-12-16 10:54 coawst.bash~
-rwxrwxr-x 1 jcwerner jcwerner 622 2011-12-16 10:54 run_nemo
drwxr-xr-x 2 jcwerner jcwerner 4096 2012-03-27 11:23 Master
-rwxrwxr-x 1 jcwerner jcwerner 20981 2012-05-03 16:35 makefile
drwxr-xr-x 2 jcwerner jcwerner 4096 2012-07-10 11:04 Compilers
drwxrwxr-x 13 jcwerner jcwerner 4096 2012-07-10 11:09 Projects
-rwxrwxr-x 1 jcwerner jcwerner 16157 2012-07-10 11:26 coawst.bash
drwxrwxr-x 2 jcwerner jcwerner 81 2012-07-10 11:31 Build
drwxr-xr-x 16 jcwerner jcwerner 4096 2012-07-10 13:51 WRF
lrwxrwxrwx 1 jcwerner jcwerner 16 2012-07-10 13:59 coawstM -> WRF/main/wrf.exe
jcwerner@nemo: /raid1/jcwerner/Projects/help_cases/COAWST_train$
```

finished compiling WRF

ls -ltr shows coawstM points to wrf.exe



## 2) Build WPS

```
jwarner@poseidon-l2:/vortexfs1/scratch/jwarner/coawst3.4_test10/WPS
[jwarner@poseidon-l2 WPS]$
[jwarner@poseidon-l2 WPS]$
[jwarner@poseidon-l2 WPS]$
[jwarner@poseidon-l2 WPS]$
[jwarner@poseidon-l2 WPS]$
[jwarner@poseidon-l2 WPS]$ ./configure
Will use NETCDF in dir: /vortexfs1/apps/netcdf-intel
$JASPERLIB or $JASPERINC not found in environment. Using default values for library paths...
-----
Please select from among the following supported platforms.

 1. Linux x86_64, gfortran      (serial)
 2. Linux x86_64, gfortran      (serial_NO_GRIB2)
 3. Linux x86_64, gfortran      (dmpar)
 4. Linux x86_64, gfortran      (dmpar_NO_GRIB2)
 5. Linux x86_64, PGI compiler  (serial)
 6. Linux x86_64, PGI compiler  (serial_NO_GRIB2)
 7. Linux x86_64, PGI compiler  (dmpar)
 8. Linux x86_64, PGI compiler  (dmpar_NO_GRIB2)
 9. Linux x86_64, PGI compiler, SGI MPT (serial)
10. Linux x86_64, PGI compiler, SGI MPT (serial_NO_GRIB2)
11. Linux x86_64, PGI compiler, SGI MPT (dmpar)
12. Linux x86_64, PGI compiler, SGI MPT (dmpar_NO_GRIB2)
13. Linux x86_64, IA64 and Opteron (serial)
14. Linux x86_64, IA64 and Opteron (serial_NO_GRIB2)
15. Linux x86_64, IA64 and Opteron (dmpar)
16. Linux x86_64, IA64 and Opteron (dmpar_NO_GRIB2)
17. Linux x86_64, Intel compiler (serial)
18. Linux x86_64, Intel compiler (serial_NO_GRIB2)
19. Linux x86_64, Intel compiler (dmpar)
20. Linux x86_64, Intel compiler (dmpar_NO_GRIB2)
21. Linux x86_64, Intel compiler, SGI MPT (serial)
22. Linux x86_64, Intel compiler, SGI MPT (serial_NO_GRIB2)
23. Linux x86_64, Intel compiler, SGI MPT (dmpar)
24. Linux x86_64, Intel compiler, SGI MPT (dmpar_NO_GRIB2)
25. Linux x86_64, Intel compiler, IBM POE (serial)
26. Linux x86_64, Intel compiler, IBM POE (serial_NO_GRIB2)
27. Linux x86_64, Intel compiler, IBM POE (dmpar)
28. Linux x86_64, Intel compiler, IBM POE (dmpar_NO_GRIB2)
29. Linux x86_64 g95 compiler (serial)
30. Linux x86_64 g95 compiler (serial_NO_GRIB2)
31. Linux x86_64 g95 compiler (dmpar)
32. Linux x86_64 g95 compiler (dmpar_NO_GRIB2)
33. Cray XE/XC CLE/Linux x86_64, Cray compiler (serial)
34. Cray XE/XC CLE/Linux x86_64, Cray compiler (serial_NO_GRIB2)
35. Cray XE/XC CLE/Linux x86_64, Cray compiler (dmpar)
36. Cray XE/XC CLE/Linux x86_64, Cray compiler (dmpar_NO_GRIB2)
37. Cray XC CLE/Linux x86_64, Intel compiler (serial)
38. Cray XC CLE/Linux x86_64, Intel compiler (serial_NO_GRIB2)
39. Cray XC CLE/Linux x86_64, Intel compiler (dmpar)
40. Cray XC CLE/Linux x86_64, Intel compiler (dmpar_NO_GRIB2)

Enter selection [1-40] : |
```

cd to WPS  
./configure

<https://github.com/wrf-model/WPS>

The Grib Edition 2 compression requires three libraries external to the WPS source code: zlib, png, and jasper. It is recommended that users request support from their system administrators when installing these packages. Users can compile the code without these libraries by selecting the "NO GRIB2" options in the build.

← 17 が標準的

Select your compiler option

## 2) Build WPS

```
jwarner@poseidon-l2:/vortexfs1/scratch/jwarner/coawst3.4_test10/WPS
[jwarner@poseidon-l2 WPS]$
[jwarner@poseidon-l2 WPS]$
[jwarner@poseidon-l2 WPS]$
[jwarner@poseidon-l2 WPS]$
[jwarner@poseidon-l2 WPS]$
[jwarner@poseidon-l2 WPS]$
[jwarner@poseidon-l2 WPS]$
[jwarner@poseidon-l2 WPS]$
[jwarner@poseidon-l2 WPS]$
[jwarner@poseidon-l2 WPS]$
[jwarner@poseidon-l2 WPS]$ ./compile
=====
Version 4.0

Linux poseidon-l2 3.10.0-693.2.2.el7.x86_64 #1 SMP Tue Sep 12 22:26:13 UTC 2017 x86_64 x86_64 x86_64 GNU/Linux

Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R) 64, Version 18.0.2.199 Build 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
=====
```

← `./compile`

```
LD_FLAGS="" \
CPPFLAGS="-D_UNDERSCORE -DBYTESWAP -DLINUX -DIO_NETCDF -DIO_BINARY -DIO_GRI81 -D8IT32 -D_UTIL" )
make[1]: Entering directory '/vortexfs1/scratch/jwarner/coawst3.4_test10/WPS/util/src'
make[1]: 'int2nc.exe' is up to date.
make[1]: Leaving directory '/vortexfs1/scratch/jwarner/coawst3.4_test10/WPS/util/src'
if [ -h int2nc.exe ] ; then \
  /bin/rm -f int2nc.exe ; \
fi ; \
if [ -h ../int2nc.exe ] ; then \
  /bin/rm -f ../int2nc.exe ; \
fi ; \
if [ -e src/int2nc.exe ] ; then \
  ln -sf src/int2nc.exe . ; \
fi
[jwarner@poseidon-l2 WPS]$
[jwarner@poseidon-l2 WPS]$
[jwarner@poseidon-l2 WPS]$
[jwarner@poseidon-l2 WPS]$ ls -ltr *.exe
lrwxrwxrwx 1 jwarner domain users 23 Feb 14 10:06 geogrid.exe -> geogrid/src/geogrid.exe
lrwxrwxrwx 1 jwarner domain users 21 Feb 14 10:06 ungrib.exe -> ungrib/src/ungrib.exe
lrwxrwxrwx 1 jwarner domain users 23 Feb 14 10:06 metgrid.exe -> metgrid/src/metgrid.exe
[jwarner@poseidon-l2 WPS]$
```

←  
When done, do an  
`ls -ltr`

And see geogrid.exe, ungrib.exe, and metgrid.exe



# 3) Geogrid create a grid

```
TextPad - C:\work\models\COAWST\WPS\namelist.wps
File Edit Search View Tools Macros Configure Window Help
namelist.wps x
&share
wrf_core = 'ARW',
max_dom = 2,
start_date = '2012-10-28_12:00:00','2012-10-28_12:00:00',
end_date = '2012-10-30_12:00:00','2012-10-30_12:00:00',
interval_seconds = 21600
io_form_geogrid = 2,
/

&geogrid
parent_id = 1, 1,
parent_grid_ratio = 1, 3,
i_parent_start = 1, 33,
j_parent_start = 1, 8,
e_we = 85, 100,
e_sn = 82, 100,
!
!!!!!!!!!!!!!!!!!!!! IMPORTANT NOTE !!!!!!!!!!!!!!!!!!!!!
! The default datasets used to produce the MAXSNOALB and ALBEDO12M
! fields have changed in WPS v4.0. These fields are now interpolated
! from MODIS-based datasets.
!
! To match the output given by the default namelist.wps in WPS v3.9.1,
! the following setting for geog_data_res may be used:
!
! geog_data_res = 'maxsnowalb_ncep+albedo_ncep+default', 'maxsnowalb_ncep+albedo_ncep+default',
!
!!!!!!!!!!!!!!!!!!!! IMPORTANT NOTE !!!!!!!!!!!!!!!!!!!!!
!
geog_data_res = 'default','default',
dx = 30000,
dy = 30000,
map_proj = 'lambert',
ref_lat = 37.50,
ref_lon = -75.00,
truelat1 = 30.0,
truelat2 = 60.0,
stand_lon = -75.0,
geog_data_path = '/stor400b/jbzambon/jcw/sandy/static_nest/wps/geog'
/

&ungrib
out_format = 'WPS',
prefix = 'NAM',
/

&metgrid
fg_name = 'NAM', 'RTG',
io_form_metgrid = 2,
/

For Help, press F1
22 3 Read Ovr Block Sync Rec Caps
```

WPS/namelist.wps

Set the &share  
and  
&geogrid  
options

← データパス  
(200b-ジョーダン・ロッド)

# 3) Geogrid create a grid

Get the geogrid data from this page:

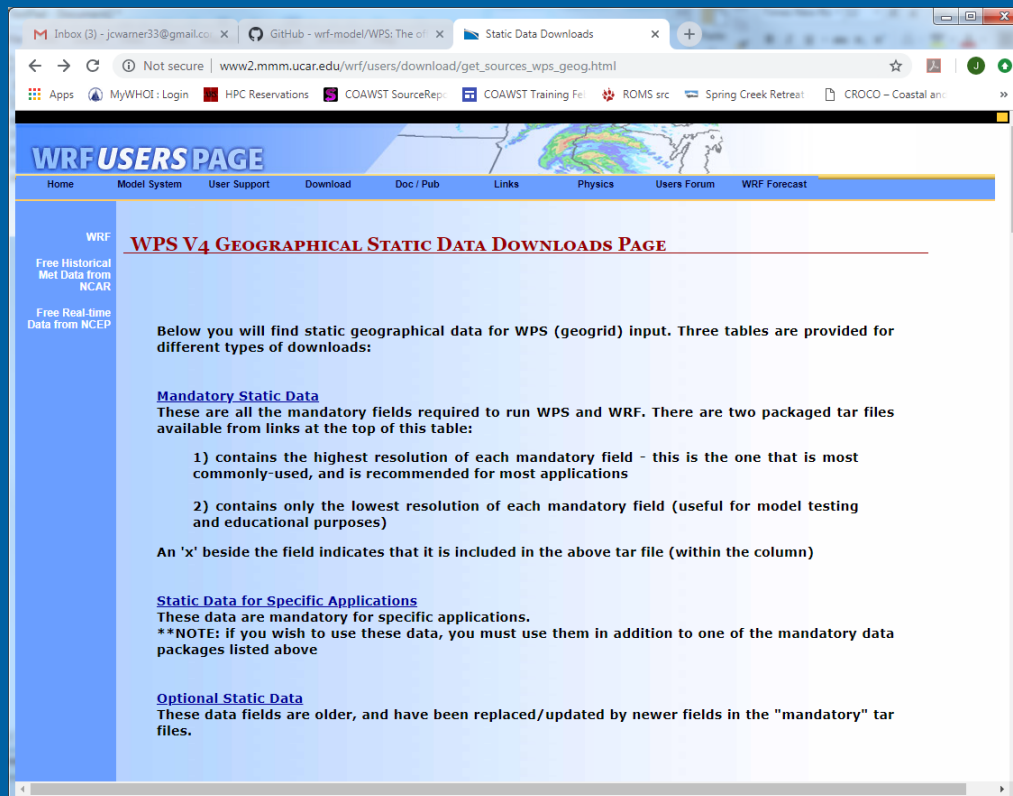
[http://www2.mmm.ucar.edu/wrf/users/download/get\\_sources\\_wps\\_geog.html](http://www2.mmm.ucar.edu/wrf/users/download/get_sources_wps_geog.html)

We chose the `geog_high_res_mandatory.tar.gz`.

Copy this file to a directory and untar the file

`tar -xvf geog_high_res_mandatory.tar.gz`

Set the `geog_data_path` in the `namelist.wps` file to this directory.



### 3) Geogrid create a grid

Link the Geogrid Table.

> ls -ltr WPS/geogrid/\*.TBL

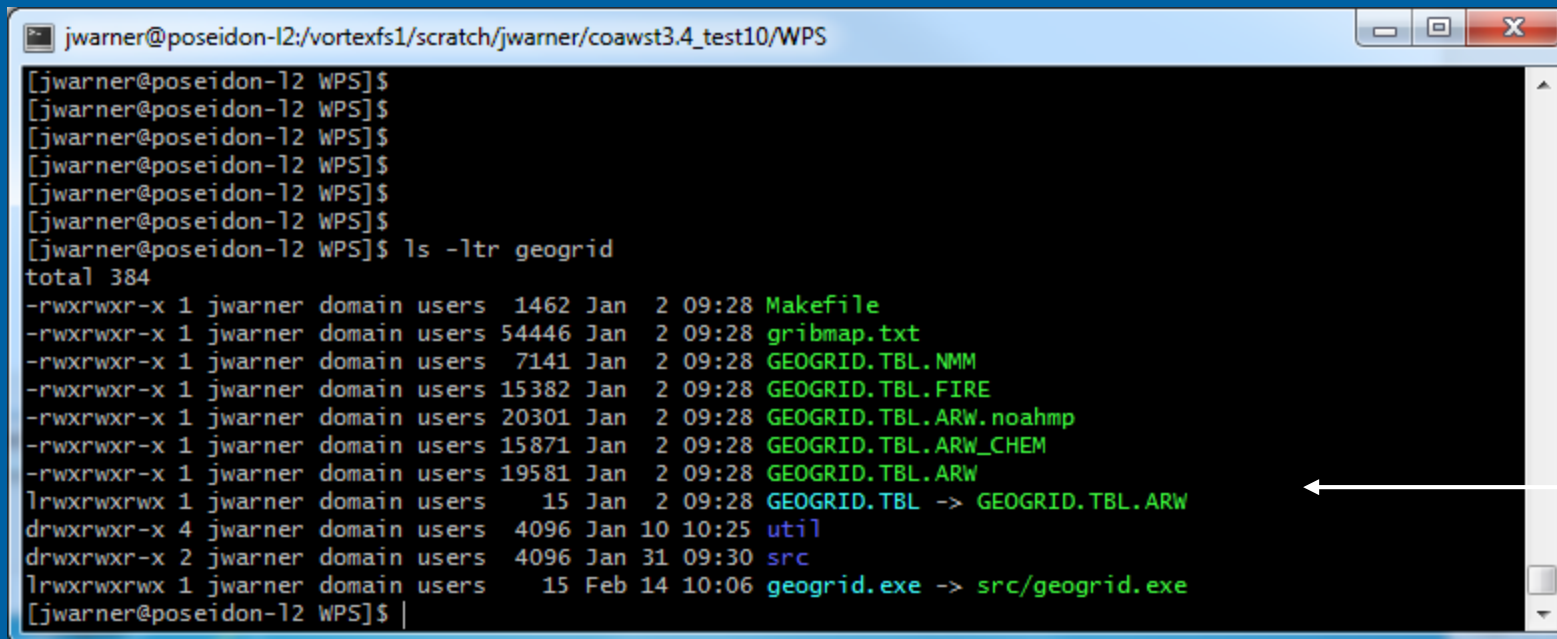
should return

> geogrid/GEOGRID.TBL -> GEOGRID.TBL.ARW

3d) run geogrid

>WPS ./geogrid.exe

and get back a complete successful information.



```
jwarner@poseidon-l2:/vortexfs1/scratch/jwarner/coawst3.4_test10/WPS
[jwarner@poseidon-l2 WPS]$
[jwarner@poseidon-l2 WPS]$
[jwarner@poseidon-l2 WPS]$
[jwarner@poseidon-l2 WPS]$
[jwarner@poseidon-l2 WPS]$
[jwarner@poseidon-l2 WPS]$
[jwarner@poseidon-l2 WPS]$ ls -ltr geogrid
total 384
-rwxrwxr-x 1 jwarner domain users 1462 Jan 2 09:28 Makefile
-rwxrwxr-x 1 jwarner domain users 54446 Jan 2 09:28 gribmap.txt
-rwxrwxr-x 1 jwarner domain users 7141 Jan 2 09:28 GEOGRID.TBL.NMM
-rwxrwxr-x 1 jwarner domain users 15382 Jan 2 09:28 GEOGRID.TBL.FIRE
-rwxrwxr-x 1 jwarner domain users 20301 Jan 2 09:28 GEOGRID.TBL.ARW.noahmp
-rwxrwxr-x 1 jwarner domain users 15871 Jan 2 09:28 GEOGRID.TBL.ARW_CHEM
-rwxrwxr-x 1 jwarner domain users 19581 Jan 2 09:28 GEOGRID.TBL.ARW
lrwxrwxrwx 1 jwarner domain users 15 Jan 2 09:28 GEOGRID.TBL -> GEOGRID.TBL.ARW
drwxrwxr-x 4 jwarner domain users 4096 Jan 10 10:25 util
drwxrwxr-x 2 jwarner domain users 4096 Jan 31 09:30 src
lrwxrwxrwx 1 jwarner domain users 15 Feb 14 10:06 geogrid.exe -> src/geogrid.exe
[jwarner@poseidon-l2 WPS]$
```

Geogrid Table

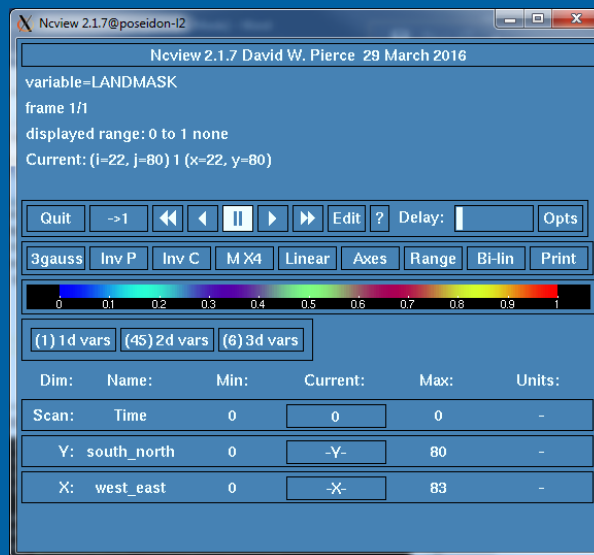
### 3) Geogrid create a grid

Run geogrid

```
>WPS ./geogrid.exe
```

and get back a complete successful information.

ls -ltr should show geo\_em.d01.nc and geo\_em.d02.nc files. Use ncview or some other viewer to check it out. Also look in geogrid.log.



# 4) Ungrib: convert grb to wps format

Get grib data for initial and boundary conditions. You can start here:  
[http://www2.mmm.ucar.edu/wrf/users/download/free\\_data.html](http://www2.mmm.ucar.edu/wrf/users/download/free_data.html)

NAM Data

**WRF USERS PAGE**

A number of datasets which can be used as input to WPS can now be downloaded directly from the [NCAR Research Data Archive \(NCAR RDA\)](#) web site:

- You must register with a user name and password to access the data (registration is free).
- Click on the 'Data Access' tab once on the data set home page.
- Most of the RDA data is free for all users. A very few are restricted to university users or researchers. Read the individual data set home pages for usage restrictions, if any, that apply to the data set.

Links to [HRRR data](#) and [Realtime Dataset from NOAA](#) can be found at the bottom of this page.

**Available GRIB Datasets from NCAR**

Dataset	Spatial Resolution	Temporal Resolution	Temporal Availability	Vtable
<a href="#">NCEP Final Analysis (GFS-FNL)</a> dt083.0	2.5 degree	12-hourly	1997-04-01 to 2007-06-30	<a href="#">Vtable.GFS</a>
<a href="#">NCEP Final Analysis (GFS-FNL)</a> dt083.2	1 degree	6-hourly	1999-07-30 to current	
<a href="#">NCEP GDAS Final Analysis</a> dt083.3	0.25 degree	6-hourly	2015-07-08 to current	
<a href="#">NCEP GFS</a> dt084.1	0.25 degree	3-hourly (for first 240 hrs) 12-hourly (hrs 240-384)	2015-01-15 to current	
<a href="#">NCEP/NCAR Reanalysis (NNRP)</a> dt090.0	209 km	6-hourly	1948-01-01 to current	<a href="#">Vtable.NNRP</a>
<a href="#">NCEP Climate Forecast System Reanalysis (CFSR)</a> dt093.0	0.3, 0.5, 1.0, 1.9, & 2.5 degree	6-hourly	1979-01-01 to 2011-01-01	<a href="#">Vtable.CFSR_press_pgbl06</a> & <a href="#">Vtable.CFSR_sfc_flux06</a>
<a href="#">NCEP Climate Forecast System Version 2 (CFSv2)</a> dt094.0	0.2, 0.5, 1.0, and 2.5 degree	6-hourly	2011-01-01 to current	
<a href="#">ECMWF Operational Model Analysis</a> dt113.0	varying		2011-01-01 to current	<a href="#">Vtable.ECMWF</a>
<a href="#">NCEP North American Mesoscale (NAM)</a> dt609.0 *only covers North America*	12 km	6-hourly	2012-01-01 to current	<a href="#">Vtable.NAM</a>

We used NAM 12 km data



# 4) Ungrib: convert grb to wps format

NAM Data

```
jwarner@poseidon-l2:/vortexfs1/scratch/jwarner/coawst3.4_test10/ungrib_data
[jwarner@poseidon-l2 ungrib_data]$
[jwarner@poseidon-l2 ungrib_data]$
[jwarner@poseidon-l2 ungrib_data]$ pwd
/vortexfs1/scratch/jwarner/coawst3.4_test10/ungrib_data
[jwarner@poseidon-l2 ungrib_data]$ ls
ecmwf nam rtg
[jwarner@poseidon-l2 ungrib_data]$ ls nam/
20121027.nam.t00z.awphys00.grb2.tm00 20121030.nam.t00z.awphys00.grb2.tm00
20121027.nam.t06z.awphys00.grb2.tm00 20121030.nam.t06z.awphys00.grb2.tm00
20121027.nam.t12z.awphys00.grb2.tm00 20121030.nam.t12z.awphys00.grb2.tm00
20121027.nam.t18z.awphys00.grb2.tm00 20121030.nam.t18z.awphys00.grb2.tm00
20121028.nam.t00z.awphys00.grb2.tm00 20121031.nam.t00z.awphys00.grb2.tm00
20121028.nam.t06z.awphys00.grb2.tm00 20121031.nam.t06z.awphys00.grb2.tm00
20121028.nam.t12z.awphys00.grb2.tm00 20121031.nam.t12z.awphys00.grb2.tm00
20121028.nam.t18z.awphys00.grb2.tm00 20121031.nam.t18z.awphys00.grb2.tm00
20121029.nam.t00z.awphys00.grb2.tm00 20121101.nam.t00z.awphys00.grb2.tm00
20121029.nam.t06z.awphys00.grb2.tm00 20121101.nam.t06z.awphys00.grb2.tm00
20121029.nam.t12z.awphys00.grb2.tm00 20121101.nam.t12z.awphys00.grb2.tm00
20121029.nam.t18z.awphys00.grb2.tm00 20121101.nam.t18z.awphys00.grb2.tm00
[jwarner@poseidon-l2 ungrib_data]$
```

Put the grb data in a folder

```
jwarner@poseidon-l2:/vortexfs1/scratch/jwarner/coawst3.4_test10/WPS
-rw-rw-r-- 1 jwarner domain users 4319 Feb 14 10:03 configure.wps
drwxrwxr-x 4 jwarner domain users 4096 Feb 14 10:06 geogrid
lrwxrwxrwx 1 jwarner domain users 23 Feb 14 10:06 geogrid.exe -> geogrid/src/geogrid.exe
lrwxrwxrwx 1 jwarner domain users 21 Feb 14 10:06 ungrib.exe -> ungrib/src/ungrib.exe
drwxrwxr-x 3 jwarner domain users 4096 Feb 14 10:06 metgrid
lrwxrwxrwx 1 jwarner domain users 23 Feb 14 10:06 metgrid.exe -> metgrid/src/metgrid.exe
drwxrwxr-x 4 jwarner domain users 4096 Feb 14 10:06 ungrib
drwxrwxr-x 3 jwarner domain users 4096 Feb 14 10:06 util
lrwxrwxrwx 1 jwarner domain users 55 Feb 14 16:17 GRIBFILE.AAA -> ../ungrib_data/nam/20121027.nam.t00z.awphys00.grb2.tm00
lrwxrwxrwx 1 jwarner domain users 55 Feb 14 16:17 GRIBFILE.AAB -> ../ungrib_data/nam/20121027.nam.t06z.awphys00.grb2.tm00
lrwxrwxrwx 1 jwarner domain users 55 Feb 14 16:17 GRIBFILE.AAC -> ../ungrib_data/nam/20121027.nam.t12z.awphys00.grb2.tm00
lrwxrwxrwx 1 jwarner domain users 55 Feb 14 16:17 GRIBFILE.AAD -> ../ungrib_data/nam/20121027.nam.t18z.awphys00.grb2.tm00
lrwxrwxrwx 1 jwarner domain users 55 Feb 14 16:17 GRIBFILE.AAE -> ../ungrib_data/nam/20121028.nam.t00z.awphys00.grb2.tm00
lrwxrwxrwx 1 jwarner domain users 55 Feb 14 16:17 GRIBFILE.AAF -> ../ungrib_data/nam/20121028.nam.t06z.awphys00.grb2.tm00
lrwxrwxrwx 1 jwarner domain users 55 Feb 14 16:17 GRIBFILE.AAG -> ../ungrib_data/nam/20121028.nam.t12z.awphys00.grb2.tm00
lrwxrwxrwx 1 jwarner domain users 55 Feb 14 16:17 GRIBFILE.AAH -> ../ungrib_data/nam/20121028.nam.t18z.awphys00.grb2.tm00
lrwxrwxrwx 1 jwarner domain users 55 Feb 14 16:17 GRIBFILE.AAI -> ../ungrib_data/nam/20121029.nam.t00z.awphys00.grb2.tm00
lrwxrwxrwx 1 jwarner domain users 55 Feb 14 16:17 GRIBFILE.AAJ -> ../ungrib_data/nam/20121029.nam.t06z.awphys00.grb2.tm00
lrwxrwxrwx 1 jwarner domain users 55 Feb 14 16:17 GRIBFILE.AAK -> ../ungrib_data/nam/20121029.nam.t12z.awphys00.grb2.tm00
lrwxrwxrwx 1 jwarner domain users 55 Feb 14 16:17 GRIBFILE.AAL -> ../ungrib_data/nam/20121029.nam.t18z.awphys00.grb2.tm00
lrwxrwxrwx 1 jwarner domain users 55 Feb 14 16:17 GRIBFILE.AAM -> ../ungrib_data/nam/20121030.nam.t00z.awphys00.grb2.tm00
lrwxrwxrwx 1 jwarner domain users 55 Feb 14 16:17 GRIBFILE.AAN -> ../ungrib_data/nam/20121030.nam.t06z.awphys00.grb2.tm00
lrwxrwxrwx 1 jwarner domain users 55 Feb 14 16:17 GRIBFILE.AAO -> ../ungrib_data/nam/20121030.nam.t12z.awphys00.grb2.tm00
lrwxrwxrwx 1 jwarner domain users 55 Feb 14 16:17 GRIBFILE.AAP -> ../ungrib_data/nam/20121030.nam.t18z.awphys00.grb2.tm00
lrwxrwxrwx 1 jwarner domain users 55 Feb 14 16:17 GRIBFILE.AAQ -> ../ungrib_data/nam/20121031.nam.t00z.awphys00.grb2.tm00
lrwxrwxrwx 1 jwarner domain users 55 Feb 14 16:17 GRIBFILE.AAR -> ../ungrib_data/nam/20121031.nam.t06z.awphys00.grb2.tm00
lrwxrwxrwx 1 jwarner domain users 55 Feb 14 16:17 GRIBFILE.AAS -> ../ungrib_data/nam/20121031.nam.t12z.awphys00.grb2.tm00
lrwxrwxrwx 1 jwarner domain users 55 Feb 14 16:17 GRIBFILE.AAT -> ../ungrib_data/nam/20121031.nam.t18z.awphys00.grb2.tm00
lrwxrwxrwx 1 jwarner domain users 55 Feb 14 16:17 GRIBFILE.AAU -> ../ungrib_data/nam/20121101.nam.t00z.awphys00.grb2.tm00
lrwxrwxrwx 1 jwarner domain users 55 Feb 14 16:17 GRIBFILE.AAV -> ../ungrib_data/nam/20121101.nam.t06z.awphys00.grb2.tm00
lrwxrwxrwx 1 jwarner domain users 55 Feb 14 16:17 GRIBFILE.AAW -> ../ungrib_data/nam/20121101.nam.t12z.awphys00.grb2.tm00
lrwxrwxrwx 1 jwarner domain users 55 Feb 14 16:17 GRIBFILE.AAX -> ../ungrib_data/nam/20121101.nam.t18z.awphys00.grb2.tm00
[jwarner@poseidon-l2 WPS]$
```

cd WPS

link the NAM files to common names that WPS will recognize.

> ./link\_grid.csh /WPS/path\_the\_files\_are\_in/2012\*.tm00

Do an ls -ltr and see all the GRIBFILE.AAA etc ....linking to all the nam data files

# 4) Ungrib: convert grb to wps format

NAM Data

```
jwarner@poseidon-l2:/vortexfs1/scratch/jwarner/coawst3.4_test10/WPS
[jwarner@poseidon-l2 WPS]$
[jwarner@poseidon-l2 WPS]$
[jwarner@poseidon-l2 WPS]$
[jwarner@poseidon-l2 WPS]$
[jwarner@poseidon-l2 WPS]$
[jwarner@poseidon-l2 WPS]$
[jwarner@poseidon-l2 WPS]$
[jwarner@poseidon-l2 WPS]$
[jwarner@poseidon-l2 WPS]$ ls -ltr V*
lrwxrwxrwx 1 jwarner domain users 33 Jan 31 08:49 Vtable -> ungrib/Variable_Tables/Vtable.NAM
[jwarner@poseidon-l2 WPS]$
```

link a Vtable to the NAM data with:  
>ln -sf ungrib/Variable\_Tables/Vtable.NAM Vtable

```
jwarner@poseidon-l2:/vortexfs1/scratch/jwarner/coawst3.4_test10/WPS
[jwarner@poseidon-l2 WPS]$ ls -ltr
total 5051520
-rwxrwxr-x 1 jwarner domain users 6338 Jan 2 09:28 README
-rwxrwxr-x 1 jwarner domain users 11514 Jan 2 09:28 configure
-rwxrwxr-x 1 jwarner domain users 4796 Jan 2 09:28 compile
-rwxrwxr-x 1 jwarner domain users 1765 Jan 2 09:28 clean
-rwxrwxr-x 1 jwarner domain users 654 Jan 2 09:28 namelist.wps.nmm
-rwxrwxr-x 1 jwarner domain users 1637 Jan 2 09:28 namelist.wps.global
-rwxrwxr-x 1 jwarner domain users 2077 Jan 2 09:28 namelist.wps.fire
-rwxrwxr-x 1 jwarner domain users 2749 Jan 2 09:28 namelist.wps.all_options
-rwxrwxr-x 1 jwarner domain users 1331 Jan 2 09:28 link_grib.csh
drwxrwxr-x 2 jwarner domain users 4096 Jan 10 10:25 arch
-rw-rw-r-- 1 jwarner domain users 22736 Jan 16 13:44 geogrid.log
-rw-rw-r-- 1 jwarner domain users 47 Jan 16 16:22 ungrib.out
-rwxrwxr-x 1 jwarner domain users 1331 Jan 17 10:11 namelist.wps~
-rw-rw-r-- 1 jwarner domain users 652 Jan 17 10:11 ungrib.log
-rwxrwxr-- 1 jwarner domain users 37325032 Jan 24 16:14 RTG:2012-10-31_00
-rwxrwxr-- 1 jwarner domain users 37325032 Jan 24 16:14 RTG:2012-10-30_12
-rwxrwxr-- 1 jwarner domain users 37325032 Jan 24 16:14 RTG:2012-10-30_06
-rwxrwxr-- 1 jwarner domain users 37325032 Jan 24 16:14 RTG:2012-10-30_00
-rwxrwxr-- 1 jwarner domain users 37325032 Jan 24 16:14 RTG:2012-10-29_18
-rwxrwxr-- 1 jwarner domain users 37325032 Jan 24 16:14 RTG:2012-10-29_12
-rwxrwxr-- 1 jwarner domain users 37325032 Jan 24 16:14 RTG:2012-10-29_06
-rwxrwxr-- 1 jwarner domain users 37325032 Jan 24 16:14 RTG:2012-10-29_00
-rwxrwxr-- 1 jwarner domain users 37325032 Jan 24 16:14 RTG:2012-10-28_18
-rwxrwxr-- 1 jwarner domain users 37325032 Jan 24 16:14 RTG:2012-10-28_12
-rwxrwxr-- 1 jwarner domain users 37325032 Jan 24 16:14 RTG:2012-10-28_06
-rwxrwxr-- 1 jwarner domain users 37325032 Jan 24 16:14 RTG:2012-10-28_00
-rwxrwxr-- 1 jwarner domain users 37325032 Jan 24 16:14 RTG:2012-10-30_18
-rwxrwxr-- 1 jwarner domain users 227104992 Jan 24 16:18 NAM:2012-10-29_00
-rwxrwxr-- 1 jwarner domain users 227104992 Jan 24 16:18 NAM:2012-10-28_18
-rwxrwxr-- 1 jwarner domain users 227104992 Jan 24 16:18 NAM:2012-10-28_12
-rwxrwxr-- 1 jwarner domain users 227104992 Jan 24 16:18 NAM:2012-10-30_00
-rwxrwxr-- 1 jwarner domain users 227104992 Jan 24 16:18 NAM:2012-10-29_18
-rwxrwxr-- 1 jwarner domain users 227104992 Jan 24 16:18 NAM:2012-10-29_12
-rwxrwxr-- 1 jwarner domain users 227104992 Jan 24 16:18 NAM:2012-10-29_06
-rwxrwxr-- 1 jwarner domain users 227104992 Jan 24 16:18 NAM:2012-10-30_12
-rwxrwxr-- 1 jwarner domain users 227104992 Jan 24 16:18 NAM:2012-10-30_06
lrwxrwxrwx 1 jwarner domain users 33 Jan 31 08:49 Vtable -> ungrib/Variable_Tables/Vtable.NAM
-rw-rw-r-- 1 jwarner domain users 2529198080 Jan 31 09:19 gribs.tar
```

Run ungrib  
> ./ungrib.exe >& ungrib.out &  
Edit the .out file and see if there were any problems.  
do an ls and see files:

NAM:2012-10-29\_00

...

NAM:2012-10-30\_06

# 4) Ungrib: convert grb to wps format

SST Data

SST ティラ

Go here for SST data: <ftp://polar.ncep.noaa.gov/pub/history/sst>  
for the times that you want, and put into a folder. We used:  
rtg\_high\_res/ rtg\_sst\_grb\_hr\_0.083.201210.gz and  
rtg\_sst\_grb\_hr\_0.083.201211.gz

このファイルはサード終了,  
grib2 を利用する

```
jwarner@poseidon-l2:/vortexfs1/scratch/jwarner/coawst3.4_test10/ungrib_data/rtg
[jwarner@poseidon-l2 rtg]$
[jwarner@poseidon-l2 rtg]$
[jwarner@poseidon-l2 rtg]$
[jwarner@poseidon-l2 rtg]$
[jwarner@poseidon-l2 rtg]$
[jwarner@poseidon-l2 rtg]$ pwd
/vortexfs1/scratch/jwarner/coawst3.4_test10/ungrib_data/rtg
[jwarner@poseidon-l2 rtg]$ ls -ltr
total 903360
-rwxrwx--- 1 jwarner domain users 470061804 Jan 31 08:58 rtg_sst_grb_hr_0.083.201210
-rwxrwx--- 1 jwarner domain users 454898520 Jan 31 08:59 rtg_sst_grb_hr_0.083.201211
[jwarner@poseidon-l2 rtg]$
```

```
jwarner@poseidon-l2:/vortexfs1/scratch/jwarner/coawst3.4_test10/WPS
-rw-rw-r-- 1 jwarner domain users 578665 Jan 31 09:43 metgrid.log
-rw-rw-r-- 1 jwarner domain users 4319 Feb 14 10:03 configure.wps
drwxrwxr-x 4 jwarner domain users 4096 Feb 14 10:06 geogrid
lrwxrwxrwx 1 jwarner domain users 23 Feb 14 10:06 geogrid.exe -> geogrid/src/geogrid.exe
lrwxrwxrwx 1 jwarner domain users 21 Feb 14 10:06 ungrib.exe -> ungrib/src/ungrib.exe
drwxrwxrwx 1 jwarner domain users 4096 Feb 14 10:06 metgrid
lrwxrwxrwx 1 jwarner domain users 23 Feb 14 10:06 metgrid.exe -> metgrid/src/metgrid.exe
drwxrwxr-x 4 jwarner domain users 4096 Feb 14 10:06 ungrib
drwxrwxr-x 3 jwarner domain users 4096 Feb 14 10:06 util
lrwxrwxrwx 1 jwarner domain users 46 Feb 14 16:40 GRIBFILE.AAA -> ../ungrib_data/rtg/rtg_sst_grb_hr_0.083.201210
lrwxrwxrwx 1 jwarner domain users 46 Feb 14 16:40 GRIBFILE.AAB -> ../ungrib_data/rtg/rtg_sst_grb_hr_0.083.201211
[jwarner@poseidon-l2 WPS]$
```

cd WPS

remove links to nam gribfiles using `rm GRIBFILE*`

Then link to the sst data using

`./link_grib.csh path_the_files_are_in/rtg_sst_grb_hr*`

# 4) Ungrib: convert grb to wps format

SST Data

```
jwarner@poseidon-12:/vortexfs1/scratch/jwarner/coawst3.4_test10/WPS
[jwarner@poseidon-12 WPS]$
[jwarner@poseidon-12 WPS]$
[jwarner@poseidon-12 WPS]$
[jwarner@poseidon-12 WPS]$
[jwarner@poseidon-12 WPS]$
[jwarner@poseidon-12 WPS]$ ls -ltr Vt*
lrwxrwxrwx 1 jwarner domain users 33 Feb 14 16:43 Vtable -> ungrib/Variable_Tables/Vtable.SST
[jwarner@poseidon-12 WPS]$
```

link a Vtable using  
ln -sf ungrib/Variable\_Tables/Vtable.SST Vtable

```
TextPad - C:\work\models\COAWST\Projects\Sandy\namelist.wps *
File Edit Search View Tools Macros Configure Window Help
namelist.wps * x coawst.bash sandy.h
/
&ungrib
out_format = 'WPS',
prefix = 'RTG',
/
&metgrid
fg_name = 'NAM', 'RTG',
io_form_metgrid = 2,
/
```

WPS/namelist.wps and change &ungrib  
prefix = 'NAM'  
to  
prefix = 'RTG'  
SST

```
jwarner@poseidon-12:/vortexfs1/scratch/jwarner/coawst3.4_test10/WPS
[jwarner@poseidon-12 WPS]$ ls -ltr
total 5051520
-rwxrwxr-x 1 jwarner domain users 6338 Jan 2 09:28 README
-rwxrwxr-x 1 jwarner domain users 11514 Jan 2 09:28 configure
-rwxrwxr-x 1 jwarner domain users 4996 Jan 2 09:28 compile
-rwxrwxr-x 1 jwarner domain users 1765 Jan 2 09:28 clean
-rwxrwxr-x 1 jwarner domain users 654 Jan 2 09:28 namelist.wps.nmm
-rwxrwxr-x 1 jwarner domain users 1637 Jan 2 09:28 namelist.wps.global
-rwxrwxr-x 1 jwarner domain users 2077 Jan 2 09:28 namelist.wps.fire
-rwxrwxr-x 1 jwarner domain users 2249 Jan 2 09:28 namelist.wps.all_options
-rwxrwxr-x 1 jwarner domain users 1331 Jan 2 09:28 link_grib.csh
-rwxrwxr-x 2 jwarner domain users 4096 Jan 10 10:25 arch
-rwxrwxr-x 1 jwarner domain users 22736 Jan 16 13:44 geogrid.log
-rwxrwxr-x 1 jwarner domain users 47 Jan 16 16:22 ungrib.out
-rwxrwxr-x 1 jwarner domain users 1331 Jan 17 10:11 namelist.wps-
-rwxrwxr-x 1 jwarner domain users 652 Jan 17 10:11 ungrib.log
-rwxrwxr-x 1 jwarner domain users 37325032 Jan 24 16:14 RTG:2012-10-31_00
-rwxrwxr-x 1 jwarner domain users 37325032 Jan 24 16:14 RTG:2012-10-30_12
-rwxrwxr-x 1 jwarner domain users 37325032 Jan 24 16:14 RTG:2012-10-30_06
-rwxrwxr-x 1 jwarner domain users 37325032 Jan 24 16:14 RTG:2012-10-30_00
-rwxrwxr-x 1 jwarner domain users 37325032 Jan 24 16:14 RTG:2012-10-29_18
-rwxrwxr-x 1 jwarner domain users 37325032 Jan 24 16:14 RTG:2012-10-29_12
-rwxrwxr-x 1 jwarner domain users 37325032 Jan 24 16:14 RTG:2012-10-29_06
-rwxrwxr-x 1 jwarner domain users 37325032 Jan 24 16:14 RTG:2012-10-29_00
-rwxrwxr-x 1 jwarner domain users 37325032 Jan 24 16:14 RTG:2012-10-28_18
-rwxrwxr-x 1 jwarner domain users 37325032 Jan 24 16:14 RTG:2012-10-28_12
-rwxrwxr-x 1 jwarner domain users 37325032 Jan 24 16:14 RTG:2012-10-28_06
-rwxrwxr-x 1 jwarner domain users 37325032 Jan 24 16:14 RTG:2012-10-28_00
-rwxrwxr-x 1 jwarner domain users 37325032 Jan 24 16:14 RTG:2012-10-30_18
-rwxrwxr-x 1 jwarner domain users 227104992 Jan 24 16:18 NAM:2012-10-29_00
-rwxrwxr-x 1 jwarner domain users 227104992 Jan 24 16:18 NAM:2012-10-28_18
-rwxrwxr-x 1 jwarner domain users 227104992 Jan 24 16:18 NAM:2012-10-28_12
-rwxrwxr-x 1 jwarner domain users 227104992 Jan 24 16:18 NAM:2012-10-30_00
-rwxrwxr-x 1 jwarner domain users 227104992 Jan 24 16:18 NAM:2012-10-29_18
-rwxrwxr-x 1 jwarner domain users 227104992 Jan 24 16:18 NAM:2012-10-29_12
-rwxrwxr-x 1 jwarner domain users 227104992 Jan 24 16:18 NAM:2012-10-29_06
-rwxrwxr-x 1 jwarner domain users 227104992 Jan 24 16:18 NAM:2012-10-30_12
-rwxrwxr-x 1 jwarner domain users 227104992 Jan 24 16:18 NAM:2012-10-30_06
```

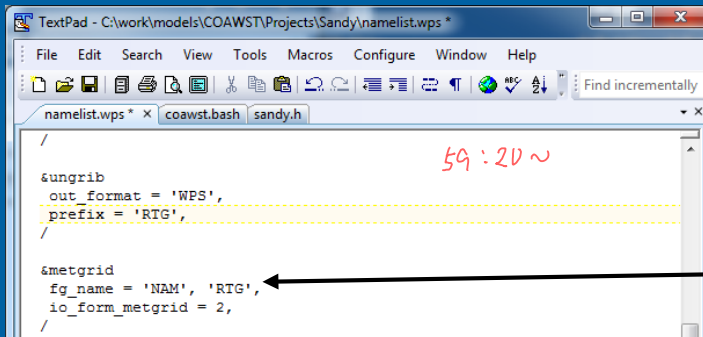
Run ungrib for the SST data  
./ungrib.exe >& ungrib\_sst.out &  
edit the .out file and see that all went well. do an ls and see files:  
RTG:2012-10-28\_00 up to  
RTG:2012-10-31\_00  
SST

# 5) Metgrid: interp met data to grid

```
[jwarner@poseidon-12 WPS]$
[jwarner@poseidon-12 WPS]$ ls -ltr metgrid
total 464
-rwxrwxr-x 1 jwarner domain users 17012 Jan 2 09:28 METGRID.TBL.NMM.rap
-rwxrwxr-x 1 jwarner domain users 15896 Jan 2 09:28 METGRID.TBL.NMM
-rwxrwxr-x 1 jwarner domain users 17117 Jan 2 09:28 METGRID.TBL.ARW.ruc
-rwxrwxr-x 1 jwarner domain users 23671 Jan 2 09:28 METGRID.TBL.ARW.rap
-rwxrwxr-x 1 jwarner domain users 34892 Jan 2 09:28 METGRID.TBL.ARW
-rwxrwxr-x 1 jwarner domain users 25668 Jan 2 09:28 METGRID.TBL.AFWA
lrwxrwxrwx 1 jwarner domain users 15 Jan 2 09:28 METGRID.TBL -> METGRID.TBL.ARW
-rwxrwxr-x 1 jwarner domain users 1434 Jan 2 09:28 Makefile
-rwxrwxr-x 1 jwarner domain users 54446 Jan 2 09:28 gribmap.txt
drwxrwxr-x 2 jwarner domain users 8192 Jan 31 09:30 src
lrwxrwxrwx 1 jwarner domain users 15 Feb 14 10:06 metgrid.exe -> src/metgrid.exe
[jwarner@poseidon-12 WPS]$
```

> ls -ltr WPS/metgrid

should show METGRID.TBL -> METGRID.TBL.ARW



```

$ungrib
out_format = 'WPS',
prefix = 'RTG',
/

$metgrid
fg_name = 'NAM', 'RTG',
io_form_metgrid = 2,
/

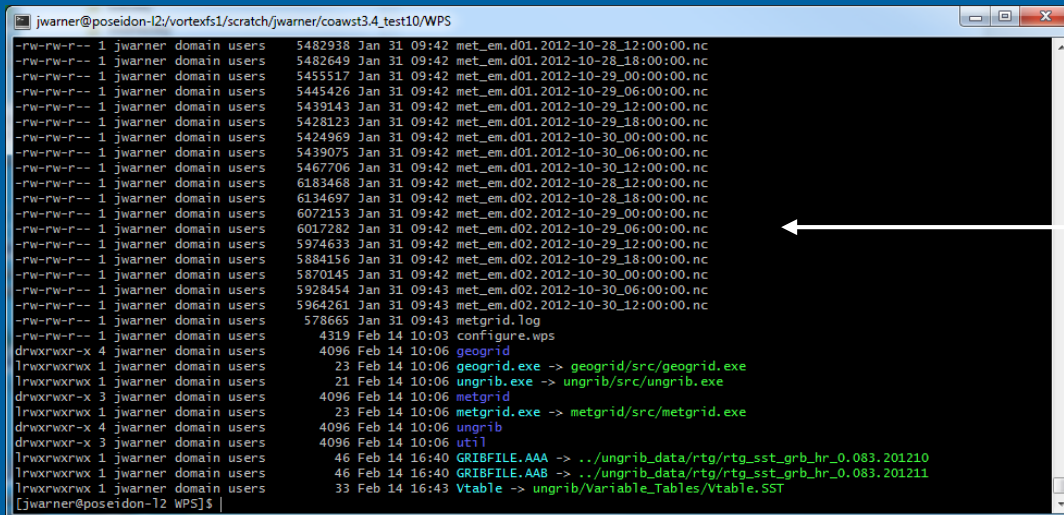
```

edit

WPS/namelist.wps and change the fg\_name to

fg\_name = 'NAM', 'RTG'

SST



```

jwarner@poseidon-12/vortexfs1/scratch/jwarner/coawst3.4_test10/WPS
-rw-rw-r-- 1 jwarner domain users 5482938 Jan 31 09:42 met_em.d01.2012-10-28_12:00:00.nc
-rw-rw-r-- 1 jwarner domain users 5482649 Jan 31 09:42 met_em.d01.2012-10-28_18:00:00.nc
-rw-rw-r-- 1 jwarner domain users 5455517 Jan 31 09:42 met_em.d01.2012-10-29_00:00:00.nc
-rw-rw-r-- 1 jwarner domain users 5445426 Jan 31 09:42 met_em.d01.2012-10-29_06:00:00.nc
-rw-rw-r-- 1 jwarner domain users 5439143 Jan 31 09:42 met_em.d01.2012-10-29_12:00:00.nc
-rw-rw-r-- 1 jwarner domain users 5428123 Jan 31 09:42 met_em.d01.2012-10-29_18:00:00.nc
-rw-rw-r-- 1 jwarner domain users 5424969 Jan 31 09:42 met_em.d01.2012-10-30_00:00:00.nc
-rw-rw-r-- 1 jwarner domain users 5439075 Jan 31 09:42 met_em.d01.2012-10-30_06:00:00.nc
-rw-rw-r-- 1 jwarner domain users 5467706 Jan 31 09:42 met_em.d01.2012-10-30_12:00:00.nc
-rw-rw-r-- 1 jwarner domain users 6183468 Jan 31 09:42 met_em.d02.2012-10-28_12:00:00.nc
-rw-rw-r-- 1 jwarner domain users 6134697 Jan 31 09:42 met_em.d02.2012-10-28_18:00:00.nc
-rw-rw-r-- 1 jwarner domain users 6072153 Jan 31 09:42 met_em.d02.2012-10-29_00:00:00.nc
-rw-rw-r-- 1 jwarner domain users 6017282 Jan 31 09:42 met_em.d02.2012-10-29_06:00:00.nc
-rw-rw-r-- 1 jwarner domain users 5974633 Jan 31 09:42 met_em.d02.2012-10-29_12:00:00.nc
-rw-rw-r-- 1 jwarner domain users 5884156 Jan 31 09:42 met_em.d02.2012-10-29_18:00:00.nc
-rw-rw-r-- 1 jwarner domain users 5870145 Jan 31 09:42 met_em.d02.2012-10-30_00:00:00.nc
-rw-rw-r-- 1 jwarner domain users 5928454 Jan 31 09:43 met_em.d02.2012-10-30_06:00:00.nc
-rw-rw-r-- 1 jwarner domain users 5964261 Jan 31 09:43 met_em.d02.2012-10-30_12:00:00.nc
-rw-rw-r-- 1 jwarner domain users 578665 Jan 31 09:43 metgrid.log
-rw-rw-r-- 1 jwarner domain users 4319 Feb 14 10:03 configure.wps
drwxrwxr-x 4 jwarner domain users 4096 Feb 14 10:06 geogrid
-rwxrwxrwx 1 jwarner domain users 23 Feb 14 10:06 geogrid.exe -> geogrid/src/geogrid.exe
-rwxrwxrwx 1 jwarner domain users 21 Feb 14 10:06 ungrib.exe -> ungrib/src/ungrib.exe
drwxrwxr-x 3 jwarner domain users 4096 Feb 14 10:06 metgrid
-rwxrwxrwx 1 jwarner domain users 23 Feb 14 10:06 metgrid.exe -> metgrid/src/metgrid.exe
-rwxrwxr-x 4 jwarner domain users 4096 Feb 14 10:06 ungrib
-rwxrwxr-x 3 jwarner domain users 4096 Feb 14 10:06 util
-rw-rw-r-- 1 jwarner domain users 46 Feb 14 16:40 GRIBFILE.AAA -> ../ungrib_data/rtg/rtg_sst_grb_hr_0.083.201210
-rw-rw-r-- 1 jwarner domain users 46 Feb 14 16:40 GRIBFILE.AAB -> ../ungrib_data/rtg/rtg_sst_grb_hr_0.083.201211
-rw-rw-r-- 1 jwarner domain users 33 Feb 14 16:43 Vtable -> ungrib/Variable_Tables/Vtable.SST
[jwarner@poseidon-12 WPS]$
```

run metgrid

in WPS/ run ./metgrid.exe

As it runs you see .... processing NAM, RTG, ...

When done check that the met files were made.

Do an ls -ltr and see the met\_em.d01\*\* files.

met\_em.d01.2012-10-28\_12:00:00.nc ...

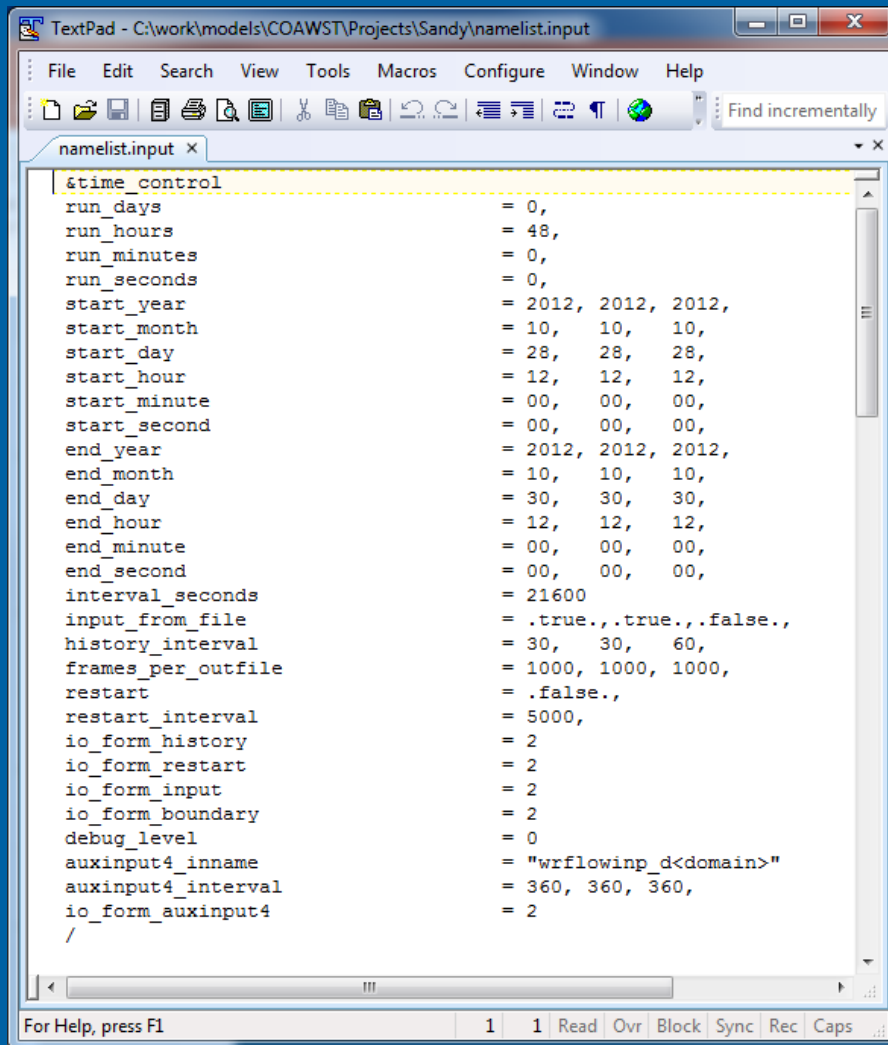
met\_em.d01.2012-10-30\_12:00:00.nc

met\_em.d02.2012-10-28\_12:00:00.nc ...

met\_em.d02.2012-10-30\_12:00:00.nc

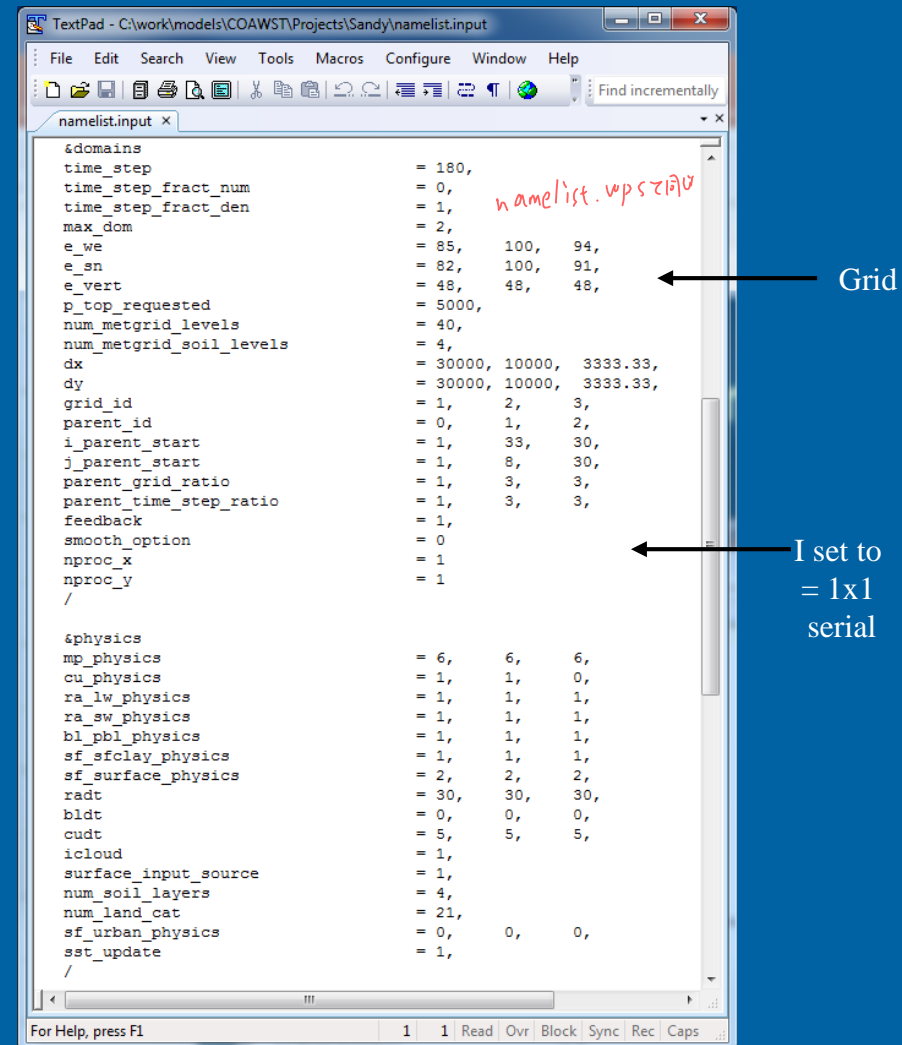
# 6) real.exe to create Init and BC files.

cd WRF/test/em\_real  
edit the namelist.input ← 編集



```
TextPad - C:\work\models\COAWST\Projects\Sandy\namelist.input
File Edit Search View Tools Macros Configure Window Help
Find incrementally

namelist.input x
[&time_control
run_days = 0,
run_hours = 48,
run_minutes = 0,
run_seconds = 0,
start_year = 2012, 2012, 2012,
start_month = 10, 10, 10,
start_day = 28, 28, 28,
start_hour = 12, 12, 12,
start_minute = 00, 00, 00,
start_second = 00, 00, 00,
end_year = 2012, 2012, 2012,
end_month = 10, 10, 10,
end_day = 30, 30, 30,
end_hour = 12, 12, 12,
end_minute = 00, 00, 00,
end_second = 00, 00, 00,
interval_seconds = 21600
input_from_file = .true., .true., .false.,
history_interval = 30, 30, 60,
frames_per_outfile = 1000, 1000, 1000,
restart = .false.,
restart_interval = 5000,
io_form_history = 2
io_form_restart = 2
io_form_input = 2
io_form_boundary = 2
debug_level = 0
auxinput4_inname = "wrfinputp_d<domain>"
auxinput4_interval = 360, 360, 360,
io_form_auxinput4 = 2
/
```



```
TextPad - C:\work\models\COAWST\Projects\Sandy\namelist.input
File Edit Search View Tools Macros Configure Window Help
Find incrementally

namelist.input x
&domains
time_step = 180,
time_step_fract_num = 0,
time_step_fract_den = 1,
max_dom = 2,
e_we = 85, 100, 94,
e_sn = 82, 100, 91,
e_vert = 48, 48, 48,
p_top_requested = 5000,
num_metgrid_levels = 40,
num_metgrid_soil_levels = 4,
dx = 30000, 10000, 3333.33,
dy = 30000, 10000, 3333.33,
grid_id = 1, 2, 3,
parent_id = 0, 1, 2,
i_parent_start = 1, 33, 30,
j_parent_start = 1, 8, 30,
parent_grid_ratio = 1, 3, 3,
parent_time_step_ratio = 1, 3, 3,
feedback = 1,
smooth_option = 0
nproc_x = 1
nproc_y = 1
/

&physics
mp_physics = 6, 6, 6,
cu_physics = 1, 1, 0,
ra_lw_physics = 1, 1, 1,
ra_sw_physics = 1, 1, 1,
bl_pbl_physics = 1, 1, 1,
sf_sfclay_physics = 1, 1, 1,
sf_surface_physics = 2, 2, 2,
radt = 30, 30, 30,
bldt = 0, 0, 0,
cudt = 5, 5, 5,
icloud = 1,
surface_input_source = 1,
num_soil_layers = 4,
num_land_cat = 21,
sf_urban_physics = 0, 0, 0,
sst_update = 1,
/
```

namelist.vps2100

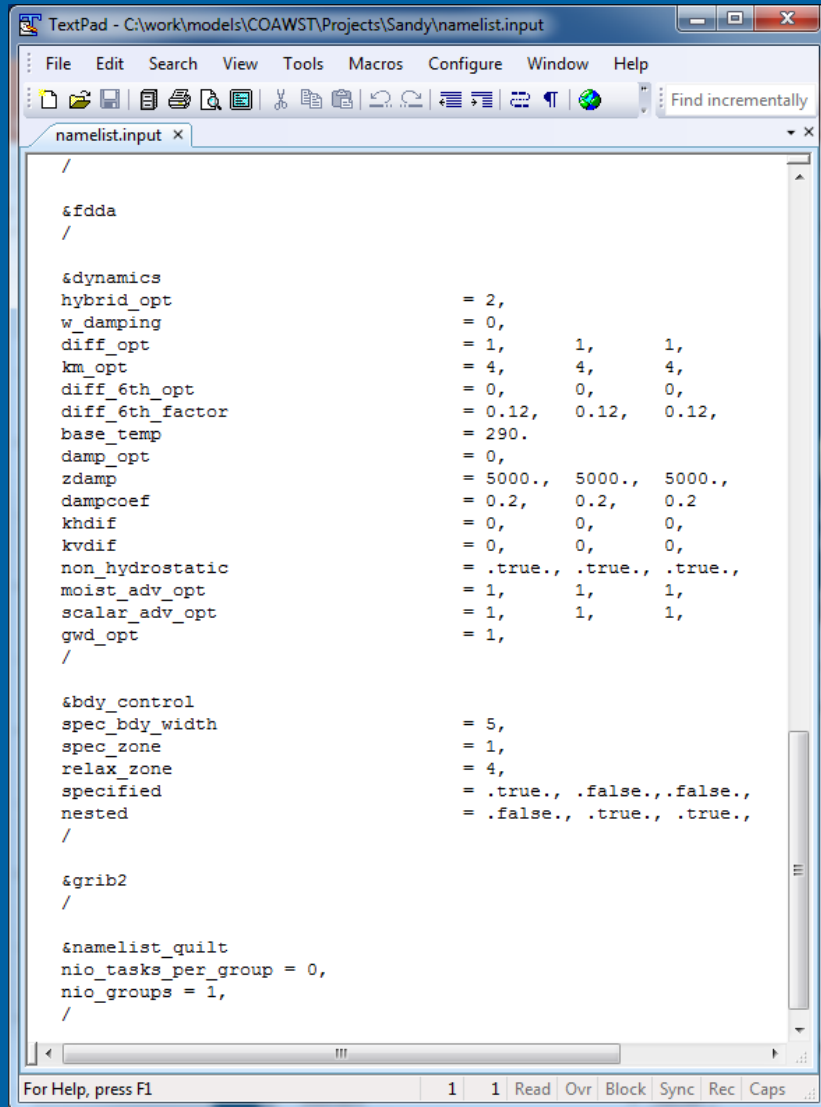
Grid

I set to = 1x1 serial



# 6) real.exe to create Init and BC files.

cd WRF/test/em\_real  
edit the namelist.input



```
TextPad - C:\work\models\COAWST\Projects\Sandy\namelist.input
File Edit Search View Tools Macros Configure Window Help
Find incrementally

namelist.input x
/

&fdda
/

&dynamics
hybrid_opt           = 2,
w_damping            = 0,
diff_opt             = 1,      1,      1,
km_opt               = 4,      4,      4,
diff_6th_opt         = 0,      0,      0,
diff_6th_factor      = 0.12,  0.12,  0.12,
base_temp            = 290.,
damp_opt             = 0,
zdamp                = 5000., 5000., 5000.,
dampcoef             = 0.2,   0.2,   0.2,
khdif                = 0,      0,      0,
kvdif                = 0,      0,      0,
non_hydrostatic      = .true., .true., .true.,
moist_adv_opt        = 1,      1,      1,
scalar_adv_opt       = 1,      1,      1,
gwd_opt              = 1,
/

&bdy_control
spec_bdy_width       = 5,
spec_zone            = 1,
relax_zone           = 4,
specified            = .true., .false., .false.,
nested               = .false., .true., .true.,
/

&grib2
/

&namelist_quilt
nio_tasks_per_group = 0,
nio_groups = 1,
/

For Help, press F1  1  1 Read Ovr Block Sync Rec Caps
```



# 6) real.exe to create Init and BC files.

```
jwarner@poseidon-12:~/vortexfs1/scratch/jwarner/coawst3.4_test10/WRF/test/em_real
[jwarner@poseidon-12 em_real]$ ls -ltr *.nc
-rwxrwxrwx 1 jwarner domain users 46 Jan 31 09:51 met_em.d01.2012-10-28_12:00:00.nc -> ../../WPS/met_em.d01.2012-10-28_12:00:00.nc
-rwxrwxrwx 1 jwarner domain users 46 Jan 31 09:51 met_em.d01.2012-10-28_18:00:00.nc -> ../../WPS/met_em.d01.2012-10-28_18:00:00.nc
-rwxrwxrwx 1 jwarner domain users 46 Jan 31 09:51 met_em.d01.2012-10-29_00:00:00.nc -> ../../WPS/met_em.d01.2012-10-29_00:00:00.nc
-rwxrwxrwx 1 jwarner domain users 46 Jan 31 09:51 met_em.d01.2012-10-29_06:00:00.nc -> ../../WPS/met_em.d01.2012-10-29_06:00:00.nc
-rwxrwxrwx 1 jwarner domain users 46 Jan 31 09:51 met_em.d01.2012-10-29_12:00:00.nc -> ../../WPS/met_em.d01.2012-10-29_12:00:00.nc
-rwxrwxrwx 1 jwarner domain users 46 Jan 31 09:51 met_em.d01.2012-10-29_18:00:00.nc -> ../../WPS/met_em.d01.2012-10-29_18:00:00.nc
-rwxrwxrwx 1 jwarner domain users 46 Jan 31 09:51 met_em.d01.2012-10-30_00:00:00.nc -> ../../WPS/met_em.d01.2012-10-30_00:00:00.nc
-rwxrwxrwx 1 jwarner domain users 46 Jan 31 09:51 met_em.d01.2012-10-30_06:00:00.nc -> ../../WPS/met_em.d01.2012-10-30_06:00:00.nc
-rwxrwxrwx 1 jwarner domain users 46 Jan 31 09:51 met_em.d01.2012-10-30_12:00:00.nc -> ../../WPS/met_em.d01.2012-10-30_12:00:00.nc
-rwxrwxrwx 1 jwarner domain users 46 Jan 31 09:51 met_em.d02.2012-10-28_12:00:00.nc -> ../../WPS/met_em.d02.2012-10-28_12:00:00.nc
-rwxrwxrwx 1 jwarner domain users 46 Jan 31 09:51 met_em.d02.2012-10-28_18:00:00.nc -> ../../WPS/met_em.d02.2012-10-28_18:00:00.nc
-rwxrwxrwx 1 jwarner domain users 46 Jan 31 09:51 met_em.d02.2012-10-29_00:00:00.nc -> ../../WPS/met_em.d02.2012-10-29_00:00:00.nc
-rwxrwxrwx 1 jwarner domain users 46 Jan 31 09:51 met_em.d02.2012-10-29_06:00:00.nc -> ../../WPS/met_em.d02.2012-10-29_06:00:00.nc
-rwxrwxrwx 1 jwarner domain users 46 Jan 31 09:51 met_em.d02.2012-10-29_12:00:00.nc -> ../../WPS/met_em.d02.2012-10-29_12:00:00.nc
-rwxrwxrwx 1 jwarner domain users 46 Jan 31 09:51 met_em.d02.2012-10-29_18:00:00.nc -> ../../WPS/met_em.d02.2012-10-29_18:00:00.nc
-rwxrwxrwx 1 jwarner domain users 46 Jan 31 09:51 met_em.d02.2012-10-30_00:00:00.nc -> ../../WPS/met_em.d02.2012-10-30_00:00:00.nc
-rwxrwxrwx 1 jwarner domain users 46 Jan 31 09:51 met_em.d02.2012-10-30_06:00:00.nc -> ../../WPS/met_em.d02.2012-10-30_06:00:00.nc
-rwxrwxrwx 1 jwarner domain users 46 Jan 31 09:51 met_em.d02.2012-10-30_12:00:00.nc -> ../../WPS/met_em.d02.2012-10-30_12:00:00.nc
[jwarner@poseidon-12 em_real]$
```

cd to WRF/test/em\_real and link the met files to here.

> ln -sf /raid1/jcwarner/Models/WRF/WPS/met\_em.d01.2003-09\* .

run the real program

run ./real.exe

When done, check to see that it made

wrfinput\_d01, wrfbdy\_d01, and wrflowinp\_d01\_d02 netcdf files.

initial conditions

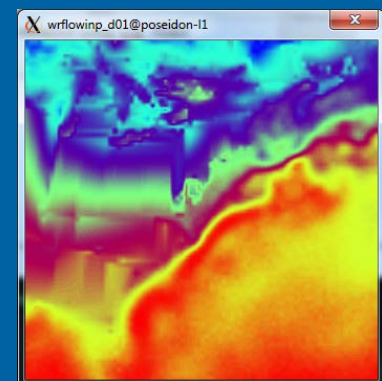
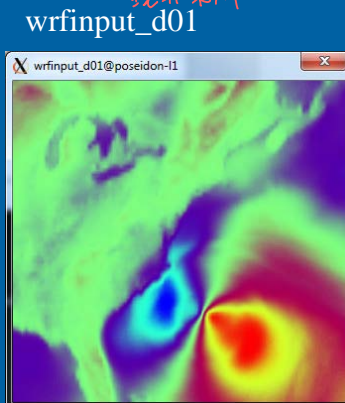
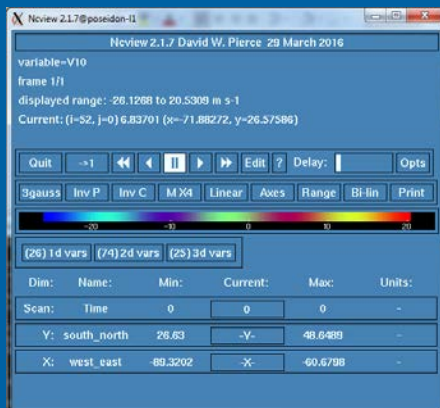
wrfinput

wrflowinp

SST

wrflowinp\_d01

SST



# 7) Run WRF wrf.exe [coawst.exe]

Now we are ready to run WRF.  
We already compiled wrf back in step 1.  
coawstM points to wrf.exe

This is the only time you will get a wrf.exe. All other builds I don't let wrf.exe to be created.  
But you always should get a coawstM .  
Always point to coawstM.

# 7) Run WRF wrf.exe [coawst.exe]

```
jwarner@poseidon-l1:/vortexfs1/scratch/jwarner/coawst3.4_test10
[jwarner@poseidon-l1 coawst3.4_test10]$ ls
br265_116162.log  coawst.bash~      namelist.output   Sandy_init.hot     swan_rst.dat
br265_116163.log  coawstM           Output_roms       Sandy_ref3_hsig.mat Tools
br265_116165.log  coawstM.backup   Output_romsswanwrfmoving Sandy_ref3_init.hot ungrib_data
br265_116172.log  COAWST_User_Manual.doc Output_romsswanwrfstatic Sandy_ref3_wind.mat URBPARM.TBL
br265_116176.log  coawst_v3.4_endofday07Feb2019.tar Output_swan       Sandy_ref3_xp.mat  User
br265_116208.log  Compilers        PRINT01           Sandy_ref3_yp.mat  VEGPARM.TBL
br265_116340.log  Data            PRINT02           Sandy_wind.mat     WPS
br265_116341.log  Errfile01       Projects          Sandy_xp.mat       WRF
br265_116457.log  GENPARM.TBL     REFDIF           Sandy_yp.mat       wrfbdy_d01
br265_116459.log  geog_data       ROMS              SeaIce             wrfinput_d01
br265_116460.log  InWave         RRTM_DATA        SOILPARM.TBL      wrfinput_d02
br265_116464.log  LANDUSE.TBL    RRTM_DATA_DBL   SWAN              wrflowinp_d01
br265_116465.log  Lib            run_coawst       swaninit01        wrflowinp_d02
br265_116496.log  makefile       runposeidon-mpi-2.sh swaninit01-001   wrfout_moving
br265_117006.log  Master        runposeidon-mpi-2.sh~ swaninit02       wrfout_static
Build            namelist.input   Sandy_hsig.mat   swaninit02-001   WW3
coawst.bash      namelist.input~  Sandy_hsig.nc    swan_ref3_rst.dat

[jwarner@poseidon-l1 coawst3.4_test10]$
```

place all of your files at the root dir  
(upper level dir). The files are:

- namelist.input
- wrfbdy\_d01
- wrflowinp\_d01
- wrfinput\_d01
- wrflowinp\_d02
- wrfininput\_d02

# 7) Run WRF wrf.exe [coawst.exe]

```
TextPad - C:\work\models\COAWST\Projects\Sandy\namelist.input *
File Edit Search View Tools Macros Configure Window Help
namelist.input * x
time_control
run_days = 0,
run_hours = 48,
run_minutes = 0,
run_seconds = 0,
start_year = 2012, 2012, 2012,
start_month = 10, 10, 10,
start_day = 28, 28, 28,
start_hour = 12, 12, 12,
start_minute = 00, 00, 00,
start_second = 00, 00, 00,
end_year = 2012, 2012, 2012,
end_month = 10, 10, 10,
end_day = 30, 30, 30,
end_hour = 12, 12, 12,
end_minute = 00, 00, 00,
end_second = 00, 00, 00,
interval_seconds = 21600
input_from_file = .true., .true., .false.,
history_interval = 30, 30, 60,
frames_per_outfile = 1000, 1000, 1000,
restart = .false.,
restart_interval = 5000,
io_form_history = 2
io_form_restart = 2
io_form_input = 2
io_form_boundary = 2
debug_level = 0
auxinput4_inname = "wrfinput_d<domain>"
auxinput4_interval = 360, 360, 360,
io_form_auxinput4 = 2
/

sdomains
time_step = 180,
time_step_fract_num = 0,
time_step_fract_den = 1,
max_dom = 2,
e_we = 85, 100, 94,
e_sn = 82, 100, 91,
e_vert = 48, 48, 48,
p_top_requested = 5000,
num_metgrid_levels = 40,
num_metgrid_soil_levels = 4,
dx = 30000, 10000, 3333.33,
dy = 30000, 10000, 3333.33,
grid_id = 1, 2, 3,
parent_id = 0, 1, 2,
i_parent_start = 1, 33, 30,
j_parent_start = 1, 8, 30,
parent_grid_ratio = 1, 3, 3,
parent_time_step_ratio = 1, 3, 3,
feedback = 1,
smooth_option = 0
nproc_x = 2
nproc_y = 4
/
```

edit namelist.input and  
set tiling:

nproc\_x = \_\_\_\_\_

nproc\_y = \_\_\_\_\_

MPI用のtilingの目安

100格子×100格子

なので

nproc\_x = 10

nproc\_y = 10

10×10=100

70プロセスが最大

1プロセスは

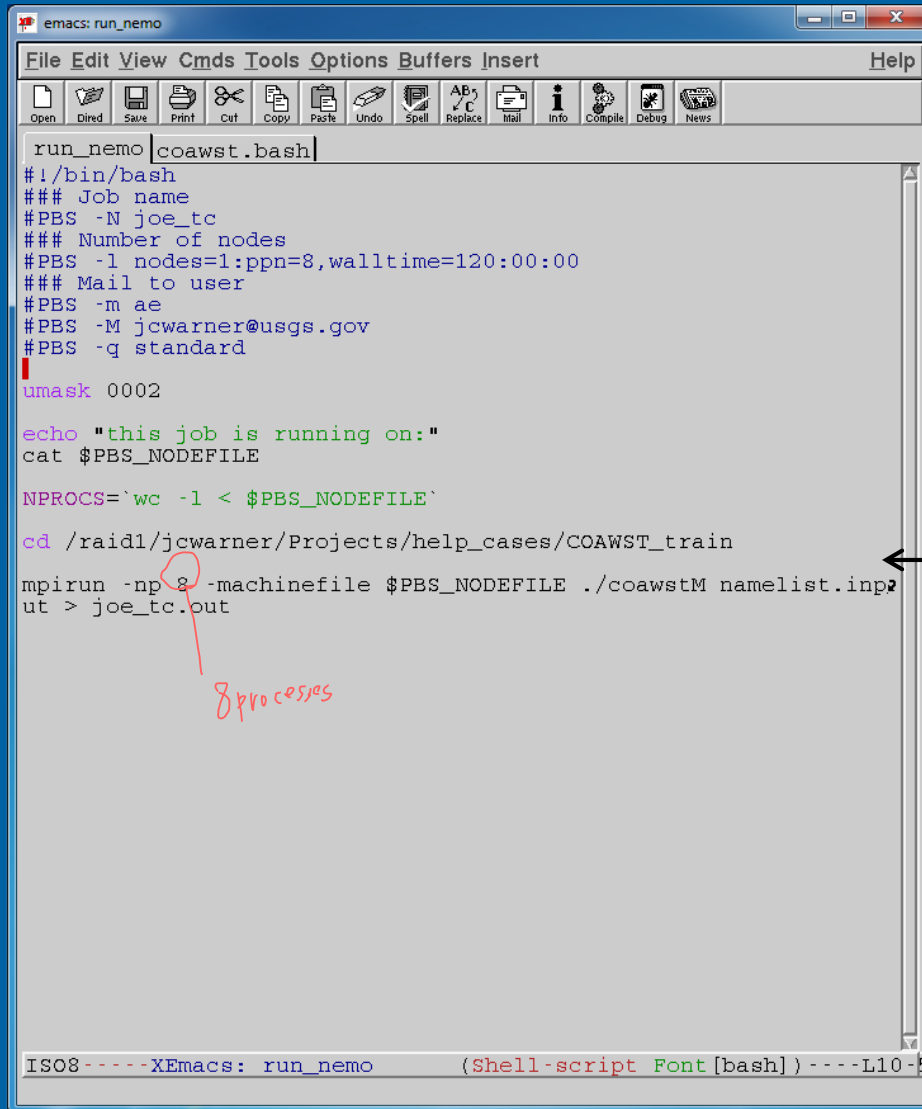
10×10=100格子

相当するが最小の目安

MPIのtiling

2×4 = 8 processes

# 7) Run WRF wrf.exe [coawst.exe]



```
run_nemo|coawst.bash|
#!/bin/bash
### Job name
#PBS -N joe_tc
### Number of nodes
#PBS -l nodes=1:ppn=8,walltime=120:00:00
### Mail to user
#PBS -m ae
#PBS -M jcwarner@usgs.gov
#PBS -q standard
umask 0002

echo "this job is running on:"
cat $PBS_NODEFILE

NPROCS=`wc -l < $PBS_NODEFILE`

cd /raid1/jcwarner/Projects/help_cases/COAWST_train

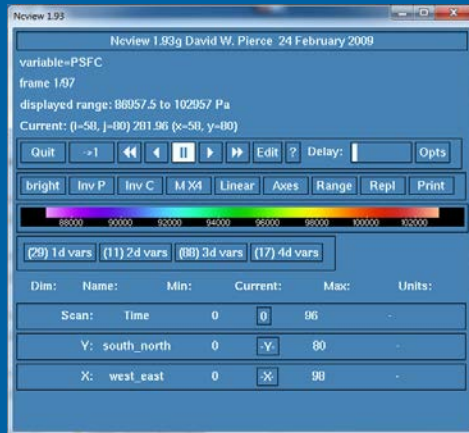
mpirun -np 8 -machinefile $PBS_NODEFILE ./coawstM namelist.inp
ut > joe_tc.out
```

ISOS-----XEmacs: run\_nemo (Shell-script Font [bash]) ----L10-B

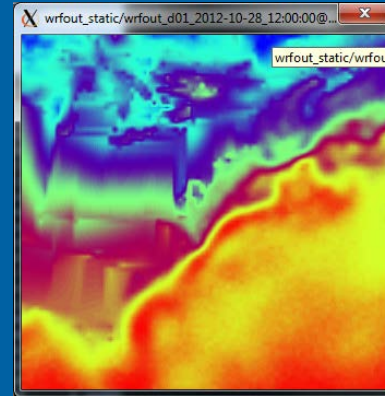
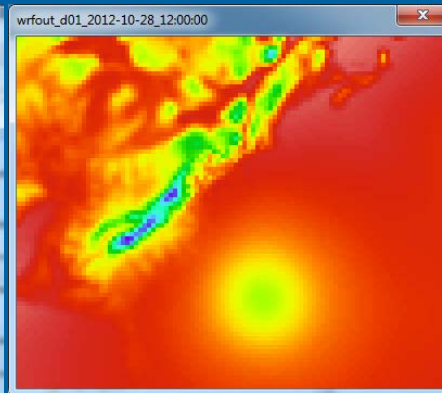
- set your run time commands
  - a) point to ./coawstM
  - b)  $np = nproc\_x * nproc\_y$  from last slide
- at command prompt we use ./run\_nemo

# 8) Output

~ 1:17:00



PSFC



SST



```
jcwerner@nemo: /raid3/jcwerner/Projects/coawst_v3.1/sandy2
drwxrwxr-x 2 jcwerner jcwerner 28672 2014-08-22 16:40 Build
drwxrwxr-x 1 jcwerner jcwerner 46290226 2014-08-22 16:40 coawstM
drwxrwxr-x 2 jcwerner jcwerner 4096 2014-08-23 20:49 Output
-rw-rw-r-- 1 jcwerner jcwerner 935 2014-08-23 20:55 swaninit01
-rw-rw-r-- 1 jcwerner jcwerner 570334 2014-08-23 20:55 namelist.output
-rw-rw-r-- 1 jcwerner jcwerner 935 2014-08-23 20:55 swaninit02
-rw-rw-r-- 1 jcwerner jcwerner 5451976 2014-08-24 00:24 Sandy_ocean_avg.nc
-rw-rw-r-- 1 jcwerner jcwerner 18921960 2014-08-24 00:24 Sandy_ocean_ref3_avg.nc
-rw-rw-r-- 1 jcwerner jcwerner 1843343388 2014-08-24 00:29 wrfout_d02_2012-10-28_12:00:00
-rw-rw-r-- 1 jcwerner jcwerner 339615352 2014-08-24 00:29 Sandy_ocean_his.nc
-rw-rw-r-- 1 jcwerner jcwerner 12188216 2014-08-24 00:29 Sandy_ocean_rst.nc
-rw-rw-r-- 1 jcwerner jcwerner 1508460588 2014-08-24 00:29 wrfout_d01_2012-10-28_12:00:00
-rw-rw-r-- 1 jcwerner jcwerner 16763667 2014-08-24 00:29 Sandy_init3.hot
-rw-rw-r-- 1 jcwerner jcwerner 1959344 2014-08-24 00:29 Sandy_ref3_watlev.mat
-rw-rw-r-- 1 jcwerner jcwerner 3918560 2014-08-24 00:29 Sandy_ref3_vel.mat
-rw-rw-r-- 1 jcwerner jcwerner 1959344 2014-08-24 00:29 Sandy_ref3_tmbot.mat
-rw-rw-r-- 1 jcwerner jcwerner 1959344 2014-08-24 00:29 Sandy_ref3_rtp.mat
-rw-rw-r-- 1 jcwerner jcwerner 1959344 2014-08-24 00:29 Sandy_ref3_hsig.mat
-rw-rw-r-- 1 jcwerner jcwerner 1959344 2014-08-24 00:29 Sandy_ref3_fric.mat
-rw-rw-r-- 1 jcwerner jcwerner 1959344 2014-08-24 00:29 Sandy_ref3_dissip.mat
-rw-rw-r-- 1 jcwerner jcwerner 1959344 2014-08-24 00:29 Sandy_ref3_depth.mat
-rw-rw-r-- 1 jcwerner jcwerner 1958560 2014-08-24 00:29 Sandy_ref3_botlev.mat
-rw-rw-r-- 1 jcwerner jcwerner 40096 2014-08-24 00:29 Sandy_ref3_yp.mat
-rw-rw-r-- 1 jcwerner jcwerner 40096 2014-08-24 00:29 Sandy_ref3_xp.mat
-rw-rw-r-- 1 jcwerner jcwerner 1959344 2014-08-24 00:29 Sandy_ref3_wlen.mat
-rw-rw-r-- 1 jcwerner jcwerner 3918560 2014-08-24 00:29 Sandy_ref3_wind.mat
-rw-rw-r-- 1 jcwerner jcwerner 1959344 2014-08-24 00:29 Sandy_ref3_wdir.mat
-rw-rw-r-- 1 jcwerner jcwerner 1959344 2014-08-24 00:29 Sandy_ref3_ubot.mat
-rw-rw-r-- 1 jcwerner jcwerner 1959344 2014-08-24 00:29 Sandy_ref3_qb.mat
-rw-rw-r-- 1 jcwerner jcwerner 6164467 2014-08-24 00:29 PRINT01
-rw-rw-r-- 1 jcwerner jcwerner 28933735 2014-08-24 00:29 Sandy_ref3_init3.hot
-rw-rw-r-- 1 jcwerner jcwerner 854996 2014-08-24 00:29 PRINT02
-rw-rw-r-- 1 jcwerner jcwerner 630724364 2014-08-24 00:29 Sandy_ocean_ref3_his.nc
-rw-rw-r-- 1 jcwerner jcwerner 22620624 2014-08-24 00:29 Sandy_ocean_ref3_rst.nc
jcwerner@nemo: /raid3/jcwerner/Projects/coawst_v3.1/sandy2$ ncview wrfout_d01_2012-10-28_12:00:00 &
```

You should get these 2 files



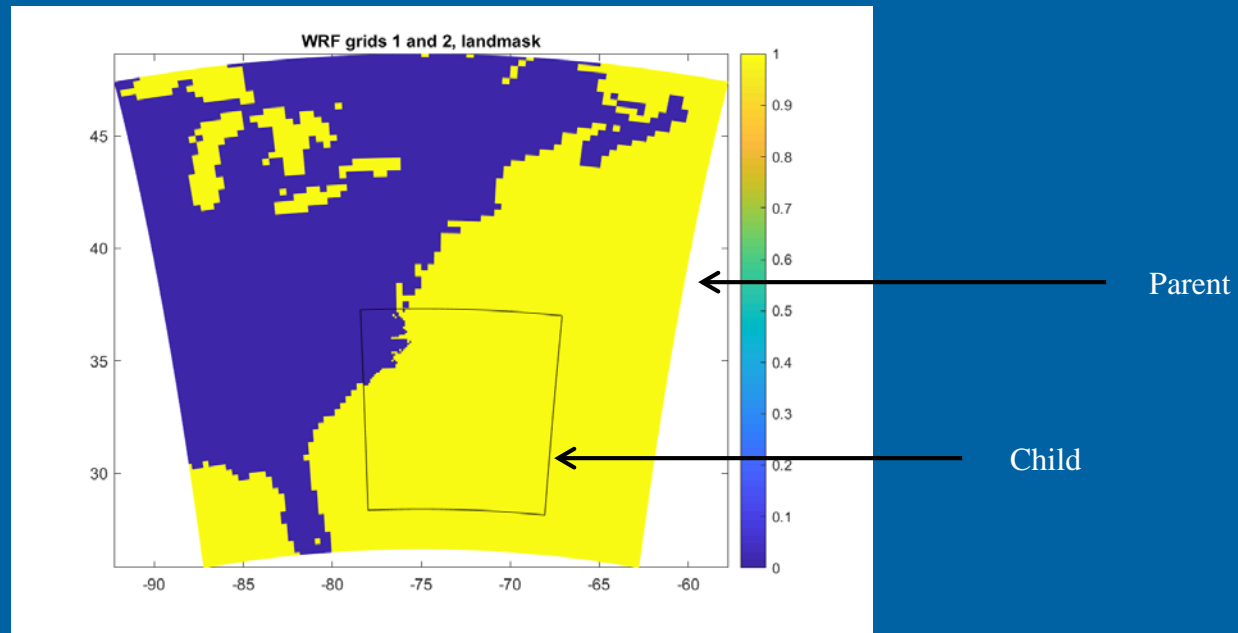


# WRF Moving nest

2:00 ~

The last example we compiled WRF application for a parent and a static nest. We now look at creating a moving nest.

The moving nest will start at the same location as the static nest. This may or may not be the best choice for your application. But this is just a test case to demonstrate the procedure.



# Build WRF – command prompt

cd to where the coawst.bash file is located.

at the command prompt type:  
./coawst.bash

follow the WRF prompts....

15 – pick what is on your system !

Always use dmpar (=distributed mem parallel).

Do not use smpar (=shaped mem parallel).

3 – vortex following

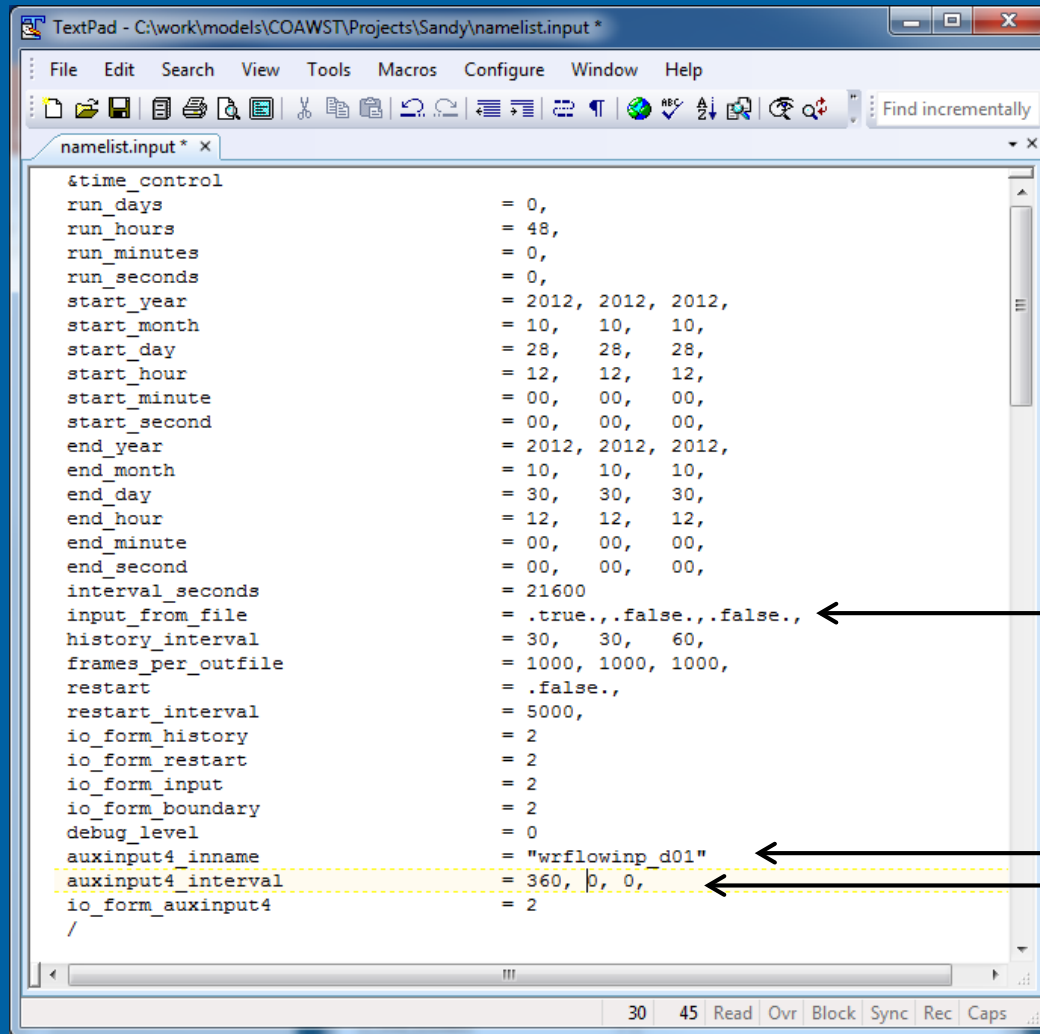
vortex-following は hurricane の  
vortex を自動的に follow する。

```
jwarner@poseidon-l1:/vortexfs1/scratch/jwarner/coawst3.4_test10
mechanisms/radm2
/bin/rm: No match.
mechanisms/radm2sorg
/bin/rm: No match.
mechanisms/saprc99
/bin/rm: No match.
mechanisms/saprc99_mosaic_4bin_vbs2
/bin/rm: No match.
mechanisms/saprc99_mosaic_8bin_vbs2_aq
/bin/rm: No match.
mechanisms/tl_mozcart
/bin/rm: No match.
rm: No match.
endif
endif
if ( -e hydro/Makefile.com ) then
checking for perl5... no
checking for perl... found /usr/bin/perl (perl)
Will use NETCDF in dir: /vortexfs1/apps/netcdf-intel
HDF5 not set in environment. Will configure WRF for use without.
PHDF5 not set in environment. Will configure WRF for use without.
Will use 'time' to report timing information
$JASPERLIB or $JASPERINC not found in environment, configuring to build without grib2 I/O...
-----
Please select from among the following Linux x86_64 options:

1. (serial) 2. (smpar) 3. (dmpar) 4. (dm+sm) PGI (pgf90/gcc)
5. (serial) 6. (smpar) 7. (dmpar) 8. (dm+sm) PGI (pgf90/pgcc): SGI MPT
9. (serial) 10. (smpar) 11. (dmpar) 12. (dm+sm) PGI (pgf90/gcc): PGI accelerator
13. (serial) 14. (smpar) 15. (dmpar) 16. (dm+sm) INTEL (ifort/icc)
17. (dm+sm) INTEL (ifort/icc): Xeon Phi (MIC architecture)
18. (serial) 19. (smpar) 20. (dmpar) 21. (dm+sm) INTEL (ifort/icc): Xeon (SNB with AVX mods)
22. (serial) 23. (smpar) 24. (dmpar) 25. (dm+sm) INTEL (ifort/icc): SGI MPT
26. (serial) 27. (smpar) 28. (dmpar) 29. (dm+sm) INTEL (ifort/icc): IBM POE
30. (serial) 31. (dmpar) PATHSCALE (pathf90/pathcc)
32. (serial) 33. (smpar) 34. (dmpar) 35. (dm+sm) GNU (gfortran/gcc)
36. (serial) 37. (smpar) 38. (dmpar) 39. (dm+sm) IBM (xlf90_r/cc_r)
40. (serial) 41. (smpar) 42. (dmpar) 43. (dm+sm) PGI (ftn/gcc): Cray XC CLE
44. (serial) 45. (smpar) 46. (dmpar) 47. (dm+sm) CRAY CCE (ftn $(NOOMP)/cc): Cray XE and XC
48. (serial) 49. (smpar) 50. (dmpar) 51. (dm+sm) INTEL (ftn/icc): Cray XC
52. (serial) 53. (smpar) 54. (dmpar) 55. (dm+sm) PGI (pgf90/pgcc)
56. (serial) 57. (smpar) 58. (dmpar) 59. (dm+sm) PGI (pgf90/gcc): -f90=pgf90
60. (serial) 61. (smpar) 62. (dmpar) 63. (dm+sm) PGI (pgf90/pgcc): -f90=pgf90
64. (serial) 65. (smpar) 66. (dmpar) 67. (dm+sm) INTEL (ifort/icc): HSW/BDW
68. (serial) 69. (smpar) 70. (dmpar) 71. (dm+sm) INTEL (ifort/icc): KNL MIC
72. (serial) 73. (smpar) 74. (dmpar) 75. (dm+sm) FUJITSU (frtpr/Fccpx): FX10/FX100 SPARC64 IXfx/X1fx

Enter selection [1-75] : 15
-----
Compile for nesting? (1=basic, 2=preset moves, 3=vortex following) [default 1]: 3
```

# Edit namelist.input



```
&time_control
run_days              = 0,
run_hours             = 48,
run_minutes           = 0,
run_seconds           = 0,
start_year            = 2012, 2012, 2012,
start_month           = 10, 10, 10,
start_day             = 28, 28, 28,
start_hour            = 12, 12, 12,
start_minute          = 00, 00, 00,
start_second          = 00, 00, 00,
end_year              = 2012, 2012, 2012,
end_month             = 10, 10, 10,
end_day              = 30, 30, 30,
end_hour              = 12, 12, 12,
end_minute            = 00, 00, 00,
end_second            = 00, 00, 00,
interval_seconds       = 21600
input_from_file        = .true., .false., .false.,
history_interval       = 30, 30, 60,
frames_per_outfile     = 1000, 1000, 1000,
restart               = .false.,
restart_interval       = 5000,
io_form_history        = 2
io_form_restart       = 2
io_form_input         = 2
io_form_boundary       = 2
debug_level           = 0
auxinput4_inname       = "wrflowinp_d01"
auxinput4_interval     = 360, 0, 0,
io_form_auxinput4      = 2
/
```

change to .true., .false.

change to wrflow\_d01

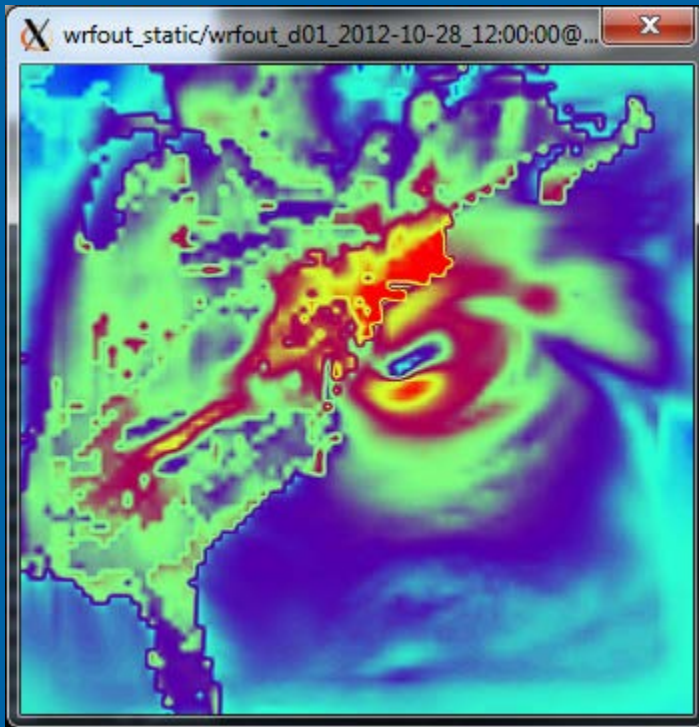
change to 360, 0

# run wrf and output

Run wrf as before (point to coawstM)

Output for d02 should now move !!

Static nest



Moving nest

