

g5_modules_perl_wrapper: Setting BASEDIR and modules for discover05
anapsas=; anassi=; anagsi=1; fulldas=1;

fvSETUP - The fvDAS Experiment Setup Tool
Finite-Volume DAS Version 5_5_2

BINARIES

Using binaries located at /gpfsm/dnb32/ccruz/DSI/GEOS5/GEOSadas-5_5_2/Linux
having CVS tag GEOSadas-5_5_2 in DAS mode

G5GCM SETTINGS

The following parameters are GEOS-5 GCM specific settings.

PARAMETER	DEFAULT	DESCRIPTION
AGCM Resolution	b72	Atmosphere Horizontal and Vertical Resolution
OGCM Resolution	c34	Ocean Horizontal and Vertical Resolution

Resolution? [b72]

EXPID

This is a short string which will serve as an identifier
for labeling all output files produced during this
experiment.

DEFAULT NAME: u000_b72
DEFAULT DESC: u000_b72, GEOSadas-5_5_2, 1st_try

EXPID? [u000_b72] GEOSadas-5_5_2_b72
EXPDESC? [GEOSadas-5_5_2_b72, GEOSadas-5_5_2, 1st_try]

FVHOME

This is the HOME directory for your fvDAS experiment.
Resource files, restarts and system output will be stored
under this directory. Usually it will contain subdirectories:

ana/ first guess/analysis output
daotovs/ daotovs field output
diag/ diagnostic field output
etc/ listings and other odds & ends
fcst/ forecast run directory
fvInput/ process required inputs
obs/ post-analysis ODS files
prog/ prognostic field output
recycle/ latest restart files
rs/ restart files
run/ resource files

DEFAULT: /discover/nobackup/ccruz/GEOSadas-5_5_2_b72

FVHOME? [/discover/nobackup/ccruz/GEOSadas-5_5_2_b72]

The directory /discover/nobackup/ccruz/GEOSadas-5_5_2_b72 does not exist. Create it now? [y]

Analysis Update Frequency

PARAMETER	DEFAULT	DESCRIPTION
varcase	1	1=IAU (default); 2=IAU w/ IBC; 3=no IAU; 4=4d-var; 5=FGAT
varwindow	360	Variational assimilation time window (min)
varoffset	180	Offset from beginning of analysis time (min)

Which case of variational analysis ? [1]
Window of the variational analysis (min)? [360]

←
← Only apply
to 4D-var

⊞

FVINPUT

Please enter the directory where the boundary conditions
(SST, topography, O3, H2O, etc) and other inputs are kept.

Default: /discover/nobackup/projects/gmao/share/dao_ops/fvInput_4dvar

Also, if (near) real-time run, enter directory where real-time
boundary conditions are (SST):

Default: /discover/nobackup/projects/gmao/share/dao_ops/fvInput_4dvar/g5gcm/bcs/realtime/SST

NOTE: Real Time SST usually found under: /share/pegion/sst

FVINPUT? [/discover/nobackup/projects/gmao/share/dao_ops/fvInput_4dvar]

REAL TIME BCS? [/discover/nobackup/projects/gmao/share/dao_ops/fvInput_4dvar/g5gcm/bcs/realtime/SST]

EXTERNAL DATA

Enter directory location for external data sets.

g5chem? [/discover/nobackup/projects/gmao/share/dao_ops/fvInput_4dvar/g5chem]



If running near
real-time, need
to know where
BCs are!

INITIAL CONDITIONS

The following start-up data files are needed for a simulation:

```
catch_internal_rst:
fvcore_internal_rst:
irrad_internal_rst:
lake_internal_rst:
landice_internal_rst:
moist_import_rst:
moist_internal_rst:
ocean_internal_rst:
pchem_internal_rst:
saltwater_import_rst:
saltwater_internal_rst:
solar_internal_rst:
surf_import_rst:
turb_import_rst:
turb_internal_rst:
vegdyn_internal_rst:
rst.lcv:           File containing date of restarts (for now)
```

Typically these files are copied from previously spun-up runs to "/discover/nobackup/ccruz/GEOSadas-5_5_2_b72/recycle".

FWICS is the directory where these start-up files are located. Answer "later" if you prefer to copy these files later.

DEFAULT: /archive/u/rtodling/restarts/discover/das540/b540_yotc_01

FWICS? [/archive/u/rtodling/restarts/discover/das540/b540_yotc_01]

```
Starting year-month-day? [20090731]
Starting hour-min-sec? [210000]
Name of experiment where ICs come from: [b540_yotc_01]
Check DM status of restarts (y/n)? [n]
```

Running DAS for an arbitrary date/time requires ICs to be available. There are utilities to create restarts for proper resolutions.

New feature: allows users to run forecast sensitivity experiments



```
-----  
ADM-TLM Defaults  
-----
```

```
Sensitivity exps use analyses          from: /archive/u/ccruz/GEOSadas-5_5_2_b72/ana/Y%y4/M%2/GEOSadas-5_5_2_b72.asm.eta.%y4%2%d2_%h2z.nc4
```

```
Note: when doing sensitivity against forecast, template resembles something like:
```

```
.... /prog/Y%y4/M%2/%s.prog.eta.%y4%2%d2_%h2z+%y4%2%d2_%h2z.nc4
```

```
Do you want to run model-adjoint-related applications [0]? (0=no, 1=yes)
```

```
-----  
Analysis Sensitivity Defaults  
-----
```

```
Verifying experiment id: GEOSadas-5_5_2_b72
```

```
Do you want to run analysis-sensitivity applications [0]? (0=no, 1=yes)
```



New feature: allows users to run analysis sensitivity and obs impact experiments

TIME RANGE

The following parameters control the time length of the whole experiment, as well as the size of each job segment, and the number of CPU's to use:

PARAMETER	DEFAULT	DESCRIPTION
NYMD_end	20090802	Ending year-month-day
NHMS_end	030000	Ending hour-min-sec
FDAYS	5	Length (in days) of FORECAST run segments
NSEGS	1	Number of DAS segments per PBS job
NX	4	Number of PEs in the zonal direction
NY	4	Number of PEs in the meridional direction
NICKNAME	g5das	Job nickname (max 5 characters)
SPLITEXE	1	Split executable mode
ASYNFRQ	030000	Freq of asynoptic background

NOTE: The actual experiment starting date/time is determined by the dynamics restart file.

Ending year-month-day? [20090802]
Length (in days) of FORECAST run segments? [5]
Number of one-day DAS segments per PBS job? [1]
Number of PEs in the zonal direction (NX)? [4]
Number of PEs in the meridional direction (NY)? [4]
Job nickname? [g5das]
Request Harpertown nodes (y/n) [y]?
Run in split executable mode (1=yes;0=no)? [1]
Frequency of background fields (hour-min-sec)? [030000]

← If changed after the setup...

*.rc files to edit, in 3Dvar:
AGCM.rc.tmpl
CAP.rc.tmpl
GSI_GridCompMod.rc.tmpl

GSI SETTINGS

The following parameters are GSI specific settings.

PARAMETER	DEFAULT	DESCRIPTION
SPECRES	62	Spectral truncation
SIGLEVS	72	Analysis sigma levels
GSIGRDS	NA	GSI horizontal grid
GEOSGRD	b	GEOS-5 native grid resolution (a,b,c,d,e)
NX	4	number of pes in the zonal direction
NY	4	number of pes in the meridional direction

Triangular spectral truncation? [62]
Analysis vertical levels (sig)? [72]
GSI grid resolution? [NA]
GEOS grid resolution instead? [b]
Number of procs in the zonal direction (NX)? [4]
Number of procs in the meridional direction (NY)? [4]

OBSERVING SYSTEM CLASSES

Merra obsclass files only (y/n)? [n] ←
Filter out obsolete data sets (y/n)? [y]

obclass	Data Description
ssi_prep_buf	NCEP Conventional Data in bufr format (specific exp)
ncep_osbuv8_buf	NCEP SSM/I Data in bufr format
ncep_spsmi_buf	NCEP TRMM Data in bufr format
ncep_sptrmm_buf	NCEP Satellite AMSUA Data (bufr)
ncep_lbamua_buf	NCEP Satellite AMSUB Data (bufr)
ncep_lbamub_buf	NCEP Satellite HIRS2 Data (bufr)
ncep_lbhrs2_buf	NCEP Satellite HIRS3 Data (bufr)
ncep_lbhrs3_buf	NCEP Satellite MSU Data (bufr)
ncep_lbmsu_buf	NCEP Satellite SSM/I Data (bufr)
ncep_ssmi_buf	NCEP Conventional Data in bufr format (ops)
ncep_prep_buf	GMAO Version of NESDIS AMSU-A AIRS
gmao_airs_buf	ERS-1 scatterometer for MERRA
merra_ers1	MERRA - Satellite AMSUA Data (bufr)
merra_lbamua_buf	MERRA - Satellite AMSUB Data (bufr)
merra_lbamub_buf	MERRA - Satellite HIRS2 Data (bufr)
merra_lbhrs2_buf	MERRA - Satellite HIRS3 Data (bufr)
merra_lbhrs3_buf	MERRA - Satellite MSU Data (bufr)
merra_lbmsu_buf	MERRA - Satellite SSU Data (bufr)
merra_lbssu_buf	MERRA - F08 Wentz SSM/I brightness temperatures
merra_ssmi08_buf	MERRA - F10 Wentz SSM/I brightness temperatures
merra_ssmi10_buf	MERRA - F11 Wentz SSM/I brightness temperatures
merra_ssmi11_buf	MERRA - F13 Wentz SSM/I brightness temperatures
merra_ssmi13_buf	MERRA - F14 Wentz SSM/I brightness temperatures
merra_ssmi14_buf	MERRA - F15 Wentz SSM/I brightness temperatures
merra_ssmi15_buf	NCEP Conventional Data in bufr format (ops)
merra_cdas_prep_buf	MERRA - NESDIS MODIS winds
merra_goesnd_prep_buf	MERRA - Profilers
merra_rmodis_prep_buf	NCEP Vital files for Tropical Storms
merra_prof_prep_buf	ERS-2 scatterometer for MERRA
ncep_tcvitals	MERRA Wentz Speeds
merra_ers2	
merra_wspd_buf	

Used to be "y"

CHECKING OBSYSTEM

- 1 will not check the existence of requested observing files
- 2 will check the given time period and classes within the observing database resource file definition (DEFAULT)
- 3 will physically check the existence of specified data from mass storage

CHECKING OBSYSTEM? [2]
Soft checking observing system files...

RADCOR SETTING

Choose from among the following RADCOR options:

VALUE	DESCRIPTION
NONE	neither NCEP nor Haimberger-hradcor
NCEP	standard NCEP (correct type 52, CORUSVAI~F)
NCEP_VAI	NCEP radcor but do not correct type 52 CORUSVAI~T
HAIMB_HRAD	Apply both Haimberger homogenization and 'hradcor'
HAIMB	No NCEP RADCOR, apply Haimberger homogenization but do not apply 'hradcor' correction.

Which RADCOR option? [NONE]

FORECASTING

The following parameters control the writing of initial conditions (a.k.a. restart files) for subsequent production of forecasting runs.

PARAMETER	DEFAULT	DESCRIPTION
FCST_frq	0	frequency in days to write restarts; "0" means never
FCST_beg	0	date (YYYYMMDD) to begin writing restarts; "0" means beginning of run
FCST_hrs	12	array of integers up to 24 numbers; Example: 0,6,12,18 will write restarts at 0z, 6z, 12z, and 18z of any selected day. "-1" means do not write restarts

You can also choose to have the forecast restart files staged to:

/discover/nobackup/ccruz/GEOSadas-5_5_2_b72/fcst

in additions to their regular archival to mass storage.

Frequency (in days) for writing restarts? [0] 1
Date to begin writing forecasts? 20090801
Forecast hours (2-digit hours, e.g., 00 12 09)? 15
Would you like the forecast restart files staged? [y] n

← If you put 1, then you will be asked to specify dates to write restarts

FVGCM OUTPUT

The FVGCM model can produce output of PROGNOSTIC fields
(instantaneous) and DIAGNOSTIC fields (average):

PARAMETER	DEFAULT	DESCRIPTION
NDOUT	030000	Freq (HHMMSS) to output PROGNOSTIC fields
NGOUT2D	010000	Freq (HHMMSS) to output (2D) DIAGNOSTIC fields
NGOUT	030000	Freq (HHMMSS) to output (3D) DIAGNOSTIC fields
IM	144	Dimension of output in zonal direction
JM	91	Dimension of output in meridional direction

Frequency for PROGNOSTIC fields? [030000]
Frequency for surface (2D) DIAGNOSTIC fields? [010000]
Frequency for upper air (3D) DIAGNOSTIC fields? [030000]
Dimension of output in zonal direction? [144]
Dimension of output in meridional direction? [91]

DIAGNOSTICS OUTPUT

You can also control the output of individual quantities
by editing file: "diag.rc" in GEOS-4; and "HISTORY.rc" in GEOS-5.
From here you can only control the output of PROG/2D/3D as a group,
or in the case of GEOS-5, the conversion of output with lcv2prs.

Would you like 2D diagnostics? [y]
Would you like 3D diagnostics? [y]
Would you like to compress diagnostics output files? [y]

+

GOCART TRACERS

Include GOCART tracers (CO, CO2, aerosols, etc) (y/n)? [y]

HISTORY

Which HISTORY template?

HISTORY.rc.tmpl
HISTORY_GSNCEP.rc.tmpl
HISTORY_GloPac.rc.tmpl
HISTORY_YOTC_ANA.rc.tmpl

DEFAULT: HISTORY.rc.tmpl

Which template? [HISTORY.rc.tmpl]

Edit COLLECTIONS list in HISTORY.rc.tmpl (y/n)? [n]

Using HISTORY template: HISTORY.rc.tmpl

Forecast HISTORY

Which Forecast HISTORY template?

GCMPROG.rc.tmpl
GCMPROG_GloPac.rc.tmpl

DEFAULT: GCMPROG.rc.tmpl

Which template? [GCMPROG.rc.tmpl]

Edit COLLECTIONS list in GCMPROG.rc.tmpl (y/n)? [n]

Sp Code| Org | Sponsor | Research

g0613 | 610.1 | Ronald Gelaro | Atmospheric Data Assimilation Development
k3002 | 610.3 | Thomas Clune | NCCS Applications Support Group

select group: [k3002]

↖ GOCART is now "y" by default

```
Setting up FVHOME directory for GEOSadas-5_5_2_b72 experiment ...
fvsetup: Writing to /discover/nobackup/ccruz/GEOSadas-5_5_2_b72/fcst/saverst.rc: 15
fvsetup: Writing to /discover/nobackup/ccruz/GEOSadas-5_5_2_b72/run/saverst.rc: 15
fvsetup: Cannot find resource file /gpfs/dnb32/ccruz/DSI/GEOS5/GEOSadas-5_5_2/Linux/etc/cqc_statbge
fvsetup: Cannot find resource file /gpfs/dnb32/ccruz/DSI/GEOS5/GEOSadas-5_5_2/Linux/etc/cqcht.parm
fvsetup: Cannot find resource file /gpfs/dnb32/ccruz/DSI/GEOS5/GEOSadas-5_5_2/Linux/etc/prep_bufhtable
fvsetup: Cannot find resource file /gpfs/dnb32/ccruz/DSI/GEOS5/GEOSadas-5_5_2/Linux/etc/prepdata.parm
fvsetup: Cannot find resource file /gpfs/dnb32/ccruz/DSI/GEOS5/GEOSadas-5_5_2/Linux/etc/prepobs_prevents.ss.parm
fvsetup: Cannot find resource file /gpfs/dnb32/ccruz/DSI/GEOS5/GEOSadas-5_5_2/Linux/etc/prevents.parm
fvsetup: Cannot find resource file /gpfs/dnb32/ccruz/DSI/GEOS5/GEOSadas-5_5_2/Linux/etc/radcor.parm
fvsetup: Cannot find resource file /gpfs/dnb32/ccruz/DSI/GEOS5/GEOSadas-5_5_2/Linux/etc/tableb.tbl
fvsetup: Cannot find resource file /gpfs/dnb32/ccruz/DSI/GEOS5/GEOSadas-5_5_2/Linux/etc/tabled.tbl
You can proceed if not using irt. Continue? [y]
/gpfs/dnb32/ccruz/DSI/GEOS5/GEOSadas-5_5_2/Linux/bin/move_restarts.pl -nymd 20090731 -nhms 210000 -d /archive/u/rtodling/restarts/discover/das540/b
540_yotc_01/rs/Y2009/M07 -expid b540_yotc_01 -dest /discover/nobackup/ccruz/GEOSadas-5_5_2_b72/recycle -newid GEOSadas-5_5_2_b72 -copy -batch -X agc
im_import
move_restarts.pl: copy /archive/u/rtodling/restarts/discover/das540/b540_yotc_01/rs/Y2009/M07/b540_yotc_01.catch_internal_rst.20090731_21z.bin
to /discover/nobackup/ccruz/GEOSadas-5_5_2_b72/recycle/GEOSadas-5_5_2_b72.catch_internal_rst.20090731_21z.bin
...
...
...
```

} ignore

CERES Configuration

Edit files in run directory for CERES configuration (y/n)? [n]

REVIEW

The job script, namelists and resources for your experiments have been created. At this point you can edit the following files and customize the default configuration:

Archiving Rules: silo.arc mstorage.arc

Job Script: g5das.j

Resources: cqc_statbge cqccht.parm fv4dvar.ccmrun.namelist.tmpl fvqcm.ccmflags.namelist fvpsas.rc gmao_airs_buftr.tbl gmao_global_blacklist.rc gmao_global_convinfo.rc gmao_global_ozinfo.rc gmao_global_pcpinfo.rc gmao_global_satinfo.rc gsi_sens.rc.tmpl noreplay.acq odsmatch.rc prep.bufrtable prepdata.parm prepobs_acarsqc.merra.parm prepobs_cqc_statbge prepobs_cqcbuftr.merra.parm prepobs_errtable.global prepobs_landc prepobs_oiqc.oberrs prepobs_prep.bufrtable prepobs_prepacqc.merra.parm prepobs_prevents.merra.parm prepobs_prevents.ss.parm prepobs_profqc.merra.parm prepobs_waypoints prevents.parm radcor.parm sac.nl.tmpl tableb.tbl tabled.tbl vtrack.ctl.tmpl vtrack.rc vtx.ctl.tmpl inst2d_met_x.rc inst3d_met_p.rc tavg2d_met_x.rc tavg3d_cld_p.rc tavg3d_cld_v.rc tavg3d_dyn_p.rc tavg3d_dyn_v.rc tavg3d_met_e.rc tavg3d_mst_p.rc tavg3d_mst_v.rc tavg3d_prs_v.rc tavg3d_tmp_p.rc tavg3d_tmp_v.rc tavg3d_wnd_p.rc tavg3d_wnd_v.rc GSI_GridComp.rc.tmpl gsi.rc.tmpl

Namelists: AGCM.rc.tmpl CAP.rc.tmpl GCMPROG.rc.tmpl HISTORY.rc.tmpl OBS_GridComp.rc.tmpl fvcore_layout.rc saverst.rc

Enter:

"e" to edit these files with emacs
"x" to edit these files with xemacs
"v" to edit these files with vi
"Q" to quit, WITHOUT archiving configuration files (DEFAULT)
"q" to quit, archiving configuration files

Which?

fvSETUP - The fvDAS Experiment Setup Tool

fvSETUP - The fvDAS Experiment Setup Tool

ALL DONE!

Well done! This completes your fvDAS experiment setup.
For starting your data assimilation experiment please enter:

```
cd /discover/nobackup/ccruz/GEOSadas-5_5_2_b72/run
qsub g5das.j
```

This script will carry out the assimilation experiment by means
of several job segments, each 1 simulation day(s) long.

FORECASTING

Your forecast initial conditions will NOT be automatically staged.
Before running forecasts, you will need to retrieve your initial
conditions (a.k.a. restart files) from mass storage.

After you complete your data assimilation experiment you can
produce forecasts by entering:

```
qsub /discover/nobackup/ccruz/GEOSadas-5_5_2_b72/fcst/g5fcst.j
```

This script will carry out the forecast runs by means of several
job segments (one per initial conditions), each 5 simulation
day(s) long.

The output location is discover05.nccs.nasa.gov under /archive/u/ccruz/GEOSadas-5_5_2_b72

Checking the mask on discover05.nccs.nasa.gov...
fvDAS v5_5_2 setup on Wed Jun 30 12:37:28 EDT 2010 by ccruz.