

Prepare Base Run Script

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PREPARE RUN SCRIPT FOR BASIC CASES

Setting up the Run Script

The GSI run script `ush/comgsi_run_regional.ksh`, which is provided with the source code, must be customized to the local environment. These changes include things such as the analysis time and date, the path to files, and MPI specific information, which are necessary for running all of tutorial cases.

For this tutorial, start by copying the original run script to a working copy

```
cd ${PATH of working directory}/run
cp ${PATH}/comGSIV3.7_EnKFv1.3/ush/comgsi_run_regional.ksh
run_gsi_regional.ksh_basic
```

This will be used as the template for all the later scripts used in the regional practice.

Make the following modifications to the script `run_gsi_regional.ksh_basic`

```
#PBS -A PXXXXXXX #PBS -l walltime=00:20:00 #PBS -N basic #PBS -l
select=1:ncpus=4:mpiprocs=4 #PBS -q premium #PBS -o out.basic #PBS -j oe
```

- On top of the scripts, add an appropriate batch script. For example on Cheyenne:
- Set the variable `GSIPROC` to 4
- Set the variable `ARCH` to `LINUX_PBS`, as an example value appropriate for Linux with PBS.
- In the **case set up** section of the script, set the environment variables to values appropriate for your environment on your machine. For example:

```
ANAL_TIME=2018081212
JOB_DIR=/gpfs/fs1/p/ral/jntp/mhu/gsi/v37/run
RUN_NAME=basic
OBS_ROOT=/glade/p/ral/jntp/DAtask/case_data/2018081212/obs
BK_ROOT=/glade/p/ral/jntp/DAtask/case_data/2018081212/bkg
GSI_ROOT=/gpfs/fs1/p/ral/jntp/mhu/gsi/v37/comGSIV3.7_EnKFv1.3
CRTM_ROOT=/glade/p/ral/jntp/DAtask/case_data/CRTM_2.2.3
ENS_ROOT=/glade/p/ral/jntp/DAtask/case_data/2018081212/gfsens
HH=`echo $ANAL_TIME | cut -c9-10`
GSI_EXE=${JOB_DIR}/gsi.x #assume you have a copy of gsi.x here
WORK_ROOT=${JOB_DIR}/${RUN_NAME}
FIX_ROOT=${GSI_ROOT}/fix
GSI_NAMELIST=${GSI_ROOT}/ush/comgsi_namelist.sh
PREPBUFR=${OBS_ROOT}/rap.t${HH}z.prepbuf.fr.tm00
BK_FILE=${BK_ROOT}/wrfout_d01_2018-08-12_12:00:00
```

- This example is only for ARW core background files.

```
if_hybrid=No      # Yes, or, No -- case sensitive !
if_4DEnVar=No    # Yes, or, No -- case sensitive (set if_hybrid=Yes first)!
if_observer=No   # Yes, or, No -- case sensitive !
if_nemsio=No     # Yes, or, No -- case sensitive !
if_oneob=No      # Yes, or, No -- case sensitive !
```

```
bk_core=ARW
bkcv_option=NAM
if_clean=clean
```

- Still in **case set up** section, leave the following settings as default:
- Search Section # **Link to the radiance data**, look for the list of observations and comment the links to the BUFR file under this section:

```
# ln -s ${srcobsfile[$ii]} ${gsiobsfile[$ii]}
```

PREPARE RUN SCRIPT AND ANAVINFO FILE FOR BASIC CASES

submit run script

The basic run script can be submitted by if use Cheyenne:

```
qsub run_gsi_regional.ksh_basic
```

An example of this basic run script is available from the link [run_gsi_regional.ksh_basic](#)

check the results

After job finished, a new directory **./basic** will appear under current directory. The files in directory ./basic is listed [here](#) and the stdout from this basic run is available [here](#)