# Installing and Running GEOS-Chem Classic 14.6 on Kamiak HPC (WSU)

## Step 1: Use Upgraded NetCDF Library

Use the custom NetCDF installation provided at:  
*/data/lab/meng/jahidul/netcdf*  
  
Alternatively, install a newer version yourself if needed.

## Step 2: Load Required Modules

Load the necessary software modules for compilation:  
*module load gcc  
module load openmpi  
module load cmake*  
  
Do NOT load the default NetCDF module from Kamiak, as it is outdated.

## Step 3: Clone GEOS-Chem Classic Repository

Follow the official GEOS-Chem documentation:  
https://geos-chem.readthedocs.io/en/latest/getting-started/quick-start.html  
  
Clone the repository with submodules:  
*git clone --recurse-submodules https://github.com/geoschem/GCClassic.git GCClassic  
cd GCClassic*

## Step 4: Create a Run Directory

Navigate to the run/ directory and execute the script:  
*cd run/  
./createRunDir.sh*

## Step 5: Enter the Run Directory

*cd /path/to/your/gc\_4x5\_merra2\_fullchem*

## Step 6: Set Environment Variables

*cd build  
  
export NETCDF\_ROOT=/data/lab/meng/jahidul/netcdf  
export NETCDF\_C\_INCLUDE\_DIR=$NETCDF\_ROOT/include  
export NETCDF\_F90\_INCLUDE\_DIR=$NETCDF\_ROOT/include  
export NETCDF\_C\_LIBRARY=$NETCDF\_ROOT/lib/libnetcdf.so  
export NETCDF\_F\_LIBRARY=$NETCDF\_ROOT/lib/libnetcdff.so*

## Step 7: Configure with CMake

*cmake ../CodeDir -DRUNDIR=.. \  
 -DNETCDF\_C\_LIBRARY=$NETCDF\_C\_LIBRARY \  
 -DNETCDF\_F\_LIBRARY=$NETCDF\_F\_LIBRARY \  
 -DNETCDF\_C\_INCLUDE\_DIR=$NETCDF\_C\_INCLUDE\_DIR \  
 -DNETCDF\_F90\_INCLUDE\_DIR=$NETCDF\_F90\_INCLUDE\_DIR \  
 -DCMAKE\_PREFIX\_PATH=$NETCDF\_ROOT*

## Step 8: Build and Install

*make -j  
make install*

## Step 9: Prepare for Simulation

Download input data using a dry-run and the download\_data.py script.(given in website)  
Edit HEMCO\_Config.rc, geoschem\_config.yml, and HISTORY.rc as needed.

## Step 10: Create a Batch Job Script

Example geoschem\_classic.sh:

## Step 11: Submit the Job

sbatch geoschem\_classic.sh