Installing PETSc in remote machines(Cedar/Graham/Niagara)

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PETSc has been installed using the BLAS and LAPACK libraries which is precompiled inside intel-MKL modules in remote machines. So, its best to use the Intel compilers for easy installation of PETSc in local directory.

1 Find out the default modules loaded in the system, using the command,
module list
Default modules needed for PETSc installation are

[a] intel/2016.4 , imkl/11.3.4.258, openmpi/2.1.1

If somehow they are not loaded or available, use the command below to load them.

2 **module purge all**

3 **module load nixpkgs/16.09 intel/2016.4 cuda/9.0.176 openmpi/2.1.1 imkl/11.3.4.258**

3.1 In Niagara system check whether the default modules for installing PETSc are loaded or not by providing 'list' command. If they are not loaded, to load the same modules as in cedar or graham one has to additionally give following commands (https://docs.computecanada.ca/wiki/Niagara_Quickstart#Loading_software_modules)

3.2 **module load CCEnv**

3.3 **module load StdEnv**

4 Download the PETSc version you need from the link below and extract the contents
http://ftp.mcs.anl.gov/pub/petsc/release-snapshots/

4 After loading the modules, 'cd' in to the unzipped PETSc folder and give configure command as
./configure --prefix=/installation/directory/different/from/the/present/one/petsc/installed/petsc-3.7.5 --ignoreWarnings=1 --with-shared-libraries --with-scalar-type=real --with-blas-lapack-dir=${MKLROOT}/lib/intel64 --with-mpi-shared-libraries=1 --with-x=0 --with-x11=0 --with-mpi-dir=$EBROOTOPENMPI --with-debugging=no --with-64-bit-indices=0 --with-cuda=0 --with-c2html=0

5 Follow instructions from PETSc to make and make install (last line of each successful compiling)

Note: TESTED WITH LOCAL INSTALLATION OF PETSC 3.7.5 AND 3.9.2 IN GRAHAM CEDAR and NIAGARA
ALL THE "WITH" COMMAND IN CONFIGURE HAS –(Two dashes) BEHIND IT.
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