

Using ISPC on Palmetto

This document briefly describes how to use the Intel SPMD Program Compiler (ispc) on the Palmetto Cluster. It assumes:

- You already have an account on the Palmetto Cluster. If you don't have one, you can apply one at <http://citi.clemson.edu/new-account/>.
- You are familiar with working in a shared HPC environment like Palmetto. If you are not, you may read the Palmetto User Guide at <https://www.palmetto.clemson.edu/palmetto/> or attend one of the Palmetto workshops (<https://citi.sites.clemson.edu/training/>).

1 Access the Palmetto

Once you have established an account on the Palmetto Cluster, you have several ways to access the Palmetto Cluster.

1. Access Palmetto by logging into the login node `login.palmetto.clemson.edu` as described on the Palmetto website (<https://www.palmetto.clemson.edu/palmetto/>) and then request an interactive node using `qsub -I`.
2. Access Palmetto using the jupyterhub webapp <https://www.palmetto.clemson.edu/jupyterhub/>.
3. Access Palmetto from a Login VM which you have requested at (<https://www.palmetto.clemson.edu/loginvm/>).

To save the need to request a separate compute node using `qsub`, the following instructions assume that you are using a Login VM.

2 Load the ispc module

```
module load ispc
which ispc
```

3 Compile an Example

```
rsync -av $ISPC_HOME/examples/simple .
cd simple
make
```

4 Run the Application

If you are using a Login VM, you may run the executable from a terminal. This might be the quickest way to debug your programs.

If you are on the login node (i.e., `login.palmetto.clemson.edu`), you have to either request an interactive compute node requested with a "qsub -I" command or submit a PBS job as follows:

1. Create a PBS job script `simple.qsub` as follows:

```
#!/bin/bash

#PBS -N ispc-test
#PBS -l select=1:ncpus=16
#PBS -l walltime=00:00:10
#PBS -j oe

module purge
module load ispc

cd $PBS_O_WORKDIR
./simple
```

2. Submit the job and wait for its completion.

```
qsub simple.qsub
qstat -u $USER
```