What is *rabbit*?

- **rabbit.engr.oregonstate.edu**
  - PCIe Bus
  - 2 E5-2630 Xeon Processors
  - 16 Cores total
  - 64 GB of memory
  - 2 TB of disk

- **NVIDIA Titan Black**
  - PCIe Bus
  - 15 SMs
  - 2880 CUDA cores
  - 6 GB of memory
  - OpenCL support
  - CUDA support
What is *rabbit*?

*rabbit* lives in a rack in our server room in the Kelley Engineering Center:

2 TB of disk
What is rabbit?
Getting to rabbit and setting up your account

Lowercase letter ‘L’

To login to rabbit:

ssh rabbit.engr.oregonstate.edu ~yourengusername

Put this in your rabbit account’s .cshrc:

```bash
setenv INTEL_LICENSE_FILE 28518@linlic.engr.oregonstate.edu
setenv ICCPATH /nfs/guille/a2/rh80apps/intel/studio.2013-sp1/composer_xe_2015/bin/
set path=($path $ICCPATH)
source /nfs/guille/a2/rh80apps/intel/studio.2013-sp1/bin/iccvars.csh intel64
```

Then activate these values like this:

```
source .cshrc
```

(These will be activated automatically the next time you login.)

Compiling and running C/C++ on rabbit

```
icpc -o try try.cpp -lm -openmp -align -qopt-report=3 -qopt-report-phase=vec
or
g++ -o try try.cpp -lm -fopenmp
```
Compiling for OpenCL

printinfo: printinfo.cpp
          icpc -o printinfo printinfo.cpp /usr/lib64/libOpenCL.so -lm -openmp

Compiling for CUDA

printinfo: printinfo.cpp
          icpc -o printinfo printinfo.cpp /usr/lib64/libOpenCL.so -lm -openmp

??????
The `printinfo` Program Output

Number of Platforms = 1
Platform #0:
   Name    = 'NVIDIA CUDA'
   Vendor  = 'NVIDIA Corporation'
   Version = 'OpenCL 1.1 CUDA 7.0.18'
   Profile = 'FULL_PROFILE'
Device #0:
   Type = 0x0004 = CL_DEVICE_TYPE_GPU
   Device Vendor ID = 0x10de (NVIDIA)
   Device Maximum Compute Units = 15
   Device Maximum Work Item Dimensions = 3
   Device Maximum Work Item Sizes = 1024 x 1024 x 64
   Device Maximum Work Group Size = 1024
   Device Maximum Clock Frequency = 1071 MHz

Device Extensions:
   cl_khr_byte_addressable_store
   cl_khr_icd
   cl_khr_gl_sharing
   cl_nv_compiler_options
   cl_nv_device_attribute_query
   cl_nv pragma unroll
   cl_nv_copy_opts
   cl_khr_global_int32_base_atomics
   cl_khr_global_int32_extended_atomics
   cl_khr_local_int32_base_atomics
   cl_khr_local_int32_extended_atomics
   cl_khr_fp64

15*192 = 2880 CUDA cores!

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Reservation System – Please use It!

https://secure.engr.oregonstate.edu/engr/resources/bailey