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 151% lscpu
Architecture:          x86_64
CPU op-mode(s):        32-bit, 64-bit
Byte Order:            Little Endian
CPU(s):                32
On-line CPU(s) list:   0-31
Thread(s) per core:    2
Core(s) per socket:    8
Socket(s):             2
NUMA node(s):          2
Vendor ID:             GenuineIntel
CPU family:            6
Model:                 63
Stepping:              2
CPU MHz:               2399.982
BogoMIPS:              4799.30
Virtualization:        VT-x
L1d cache:             32K
L1i cache:             32K
L2 cache:              256K
L3 cache:              20480K
NUMA node0 CPU(s):     0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30
NUMA node1 CPU(s):     1,3,5,7,9,11,13,15,17,19,21,23,25,27,29,31
```
What is *rabbit*?

*rabbit* lives in a rack in our server room in the Kelley Engineering Center:
What is *rabbit*?
What is *rabbit*?
Getting to *rabbit* and setting up your account

To login to *rabbit*:

```
ssh rabbit.engr.oregonstate.edu  -l  yourengrusername
```

Put this in your *rabbit* account’s `.cshrc`:

```
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

```bash
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_nvPragma_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!
Reservation System – Please use It!!

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

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