HW2 - OpenMP
New Servers!

- Instructions on how to connect can be found at the course site.

- Connect with your campus account!
Server Details

- We have two CPUs on each machine.
- **CPU** = The entire chip.
- We have a single LLC (L3) on each CPU.
- **Core** = A single unit in a CPU containing a single L1 and L2 and two hardware threads.
- We have 32 cores and 64 hardware threads on each CPU, because of hyper-threading.
- In the machine topology we published, we refer to each CPU as NUMA-node.
- For more information on the specific CPU please click here.
Hyper Threading

➢ 8 hardware-threads are actually 4 cores.

➢ Since each thread should run independently in the current assignment, then we prefer to run each thread on a whole core and not a hardware-thread.

➢ To do that we will run the competition on 16 OpenMP threads using 32 hardware-threads (i.e. 16 cores)
Speedup

➢ You need to pass the threshold as written in the assignment. The threshold is for 4 and 8 OpenMP threads that are run both on 8 hardware-threads.

➢ If you still can’t pass it try looking at:
  ➢ Load Balancing
  ➢ Servers Architecture
  ➢ Memory Bandwidth
  ➢ NUMA
  ➢ Cache
Competition!

➢ It is possible to reach 5 bonus points to the final grade!