

## 1 Introduction

1. Search on the Internet for the *top500* list.
  - Which is the fastest supercomputer in the world? In Europe? In Germany?
  - For each of them, what kind of architecture is it?  
Number and type of nodes, number of cores, coprocessors, amount of memory, ...
  - What is their peak performance?
2. Do you have a smart phone? (If you don't, simply pick one and go on :)
  - How many processors does it have?
  - How much main memory?
  - Can you find how many floating point operations per second (flop/s) it can perform in double precision? Based on this information, would it have made it into the top 500 in 1994? 1996? 2000?  
(Hint: top500 web page, "statistics" menu).
3. Search on the Internet for the terms *RWTH ITC primer*. This is the reference document to find information about RWTH's computing cluster and its usage. The IT Center (ITC) administers the cluster.
  - Find one node/cluster of each type: large cluster (>1000 nodes), many-core CPUs (>= 32 cores), GPUs.
  - Read in section 5 about the available C compilers and common flags.
  - Read Section 4.3.2 "The Module Package".  
Play around with the module command to get familiar with it.
4. Test your computing environment on ITC's cluster.
  - Connect to one of its front end nodes.  
(Hint: Section 4.1 of the primer, `ssh`.)
  - Download the file `TestEnvironment.tgz` from the course webpage at L2P, and copy it to your account in the cluster.  
(Hint: Section 4.1 of the primer, `scp`.)
  - Execute the script `run_test.sh`.  
If you encounter any problems, contact Diego (`fabregat@aices.rwth-aachen.de`)