Wavelet2 is a recently acquired calculations server owned by Signal Processing Group AGH. It is running under Ubuntu Server LTS and it is used for tasks related to developing automatic speech recognition system using Matlab, C++, Python, SQL and other software. Its computational power is significantly smaller than any modern supercomputers, but it is equipped with stable software which allows more efficient work on specialised signal and natural language processing than general usage and access machines.

**Memory & Storage**
- Two sets 3x DDR3 4GB, 1333MHz, ECC Reg with Parity CL9 Dual Rank x4, Triple Channel Service
- Total: 24GB of RAM memory
- Two solid state drives, 256GB each
  - Random Access Time is around 0.1 ms
  - Reading: 200 MB/s, Writing: 150 MB/s
- Three hard drives, 1500GB each
  - 64MB Cache memory
  - Random Access Time is 10 ms
  - Data Transfer: 300 MB/s

**GPU**
- GeForce GTX 295 with CUDA, PCI-Ex x16- solution
- 2 GPU processors, with 480 stream processors
- 1792MB type DDR3 memory
- 896-bit memory bus (448bit per GPU)
- Memory bandwidth above 100GB/s
- 1750GFlops in Single Precision
- Support for OpenCL, Linux and MS DirectX 10 with full Shader Model 4.0

**Server Internals**
- Intel Server Board S5520HC:
  - 2 processors, (FC) LGA1366 slots
  - FSB bus operates on 1333 MHz
  - Up to 25.6 GB/sec bandwidth per link between processors
  - Triple Channel, max 32GB DDR3
  - PCI Express 2.0 x16
  - 6x SATA, 2x Integrated Gigabit LAN

- 2x Intel Xeon 5500 processors
  - Nehalem architecture, 45nm technology, 64-bit instruction set,
  - PassMark CPU test score: 4600 units
  - Each processor has:
    - 4 cores, 8 threads
    - 8MB Cache

**System Architecture**
- Intel XEON 5500
  - 1 core 2 threads
  - 1 core 2 threads
  - 1 core 2 threads
  - 1 core 2 threads

- Intel QPI
  - Up to 25.6 GB/sec bandwidth per link

- NVidia GeForce GTX 285
  - PCIe x16
  - 4GB DDR3
  - DirectX 10

- Intel 5520
  - Chipset
  - DDR3

**Scale of example NLP problem**