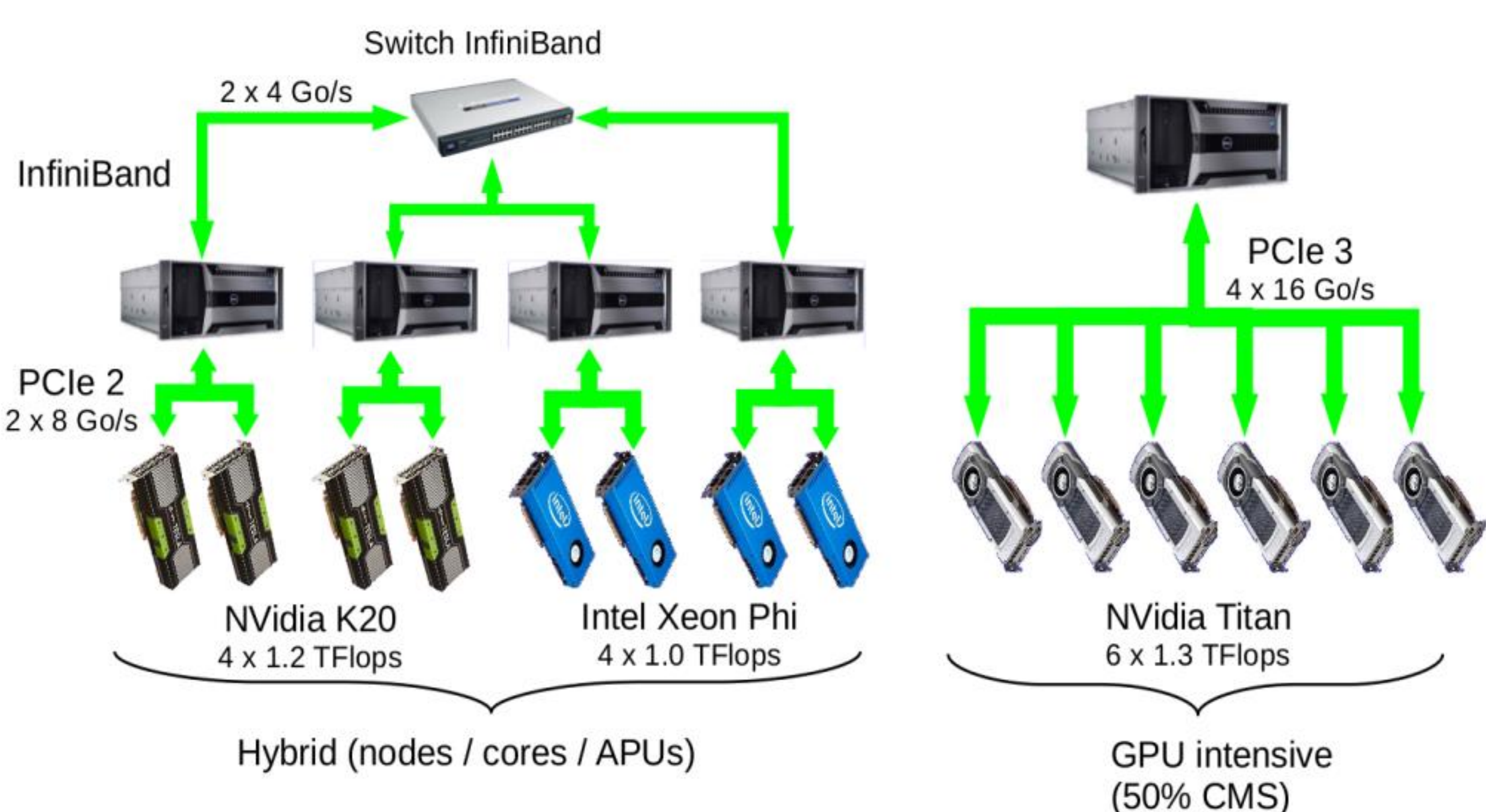


Goals

- Study the needed transformation of P2IO scientific software in order to exploit new many-core hardware, such as NVidia **Kepler** accelerators and Intel **Xeon Phi** coprocessors.
- Study the integration of such hardware in computing **Grids**, which are inherently heterogeneous => we favor portable software technologies such as **OpenCL** and OpenACC.



Hardware available

- 2 nodes R720-Phi**
 - Motherboard : dual proc E5-2650, 64 Go RAM
 - x 2 cards Intel 5110P**, + Infiniband QDR
- 2 nodes R720-Kepler**
 - Motherboard : dual proc E5-2650, 64 Go RAM
 - x 2 cards NVidia K20**, + Infiniband QDR
- 1 node Transtec CUDA 8230**
 - Dual proc **E5-2650 v2**, 128 Go RAM
 - x 6 cards NVidia Titan**, PCI Express 3.0

Examples of ongoing activities

- Software prototyping**
 - CMS signal/background discrimination using Matrix Element Methods.
 - SDO satellite image processing.
 - CTA telescope signal processing.
 - Simulation of ions plasma/cloud in Penning traps.
 - SHOC & vectorisation benchmarking.
 - Grid middleware tuning.
- Invited talks:** René Brun, CAPS, NVidia, Intel.
- Given talks:** CHEP'15, GPUinHEP'14, JI'12...
- Tutorial** about hybrid computing at JDEV'2013.

