Contribution ID: **15**   Type: **Talk**

A virtual scientific computational environment for mobile devices

Thursday, November 8, 2012 2:50 PM (25 minutes)

Until now all client computers for scientific computation has been limited to windows and Linux powered workstations which are connected High Performance Computers (used as servers). The virtual scientific computational environment will move scientific computation from the desktop clients to mobile clients. Virtual scientific environment and Virtual network communication application (virtual graphic environment and ultra-high speed file transfer, UDT protocol) should be ported to the mobile devices. These mobile clients will be connected to the HPCs via Wi-Fi, LTE, 3G and Virtual Private Networks (VPN). Benchmarking of the Wi-Fi and 3G connectivity of various mobile devices proved that Wi-Fi connectivity has the best and stable connection. The current channel binding technology gives up to 450Mbps, this speed is expected to double with the 1Gbps Wi-Fi routers which will soon be available. Scientists and researchers can now have the flexibility of performing graphical scientific computations on the go. A hybrid cluster (60 Kepler GPUs, 256 cores) which will have up to up to 3x processing performance and efficiency (compared to the Tesla) with the new SMX, Dynamic parallelism and Hyper-Q functionalities is planned to be built in 5 months. Scientists and researchers will be able to experience virtual scientific calculations in mobile environment soon.

Authors: CHO, Haneol (Korea Institute of Science and Technology);   LEE, Kyu Hwan;   BOATENG, Samuel

Presenter: CHO, Haneol (Korea Institute of Science and Technology)

Session Classification: Session: Grand challenges in multiscale modelling (Click for details or select 'Detailed view')

Track Classification: Grand challenges in multiscale modelling