

Applications by Charity Engine

Charity Engine has developed (and is still developing) the following desktop grid applications and infrastructures since the start of IDGF-SP, all BOINC-enabled:

- 1) A distributed logging system which offloads grid-related accounting (a resource-hungry task) to the grid itself, increasing the efficiency of our servers by 200%. Each node does its own logging, effectively using the grid to manage the grid.
- 2) A network re-imaging and caching system, which enables the use of (typically corporate) locations where a large group of PCs have no local storage, switch off and on frequently with full re-imaging, and cannot store nor finish partly-complete work units. This is particularly bad for tasks with long work units which will be never fully completed before the PC is switched off, so wasting any computation. Storage and re-imaging is done by a local server over LAN.
- 3) A desktop grid accounting system which allows differentiation between individual/public PCs and company/organisational resources. We can send tasks to just the home PCs, or just to the office PCs, or even to a single office.
- 4) A BOINC-enabled Bitcoin miner, Litecoin miner and CUDAMiner, simply to generate funds for Charity Engine using any surplus processing. The grid is never idle, nothing is wasted.
- 5) Enabled the Acellera CellMD molecular modelling application to use previously unusable PC GPUs (see #2), still ongoing. User community is computational drug design, biotech, pharmaceutical.
- 6) Porting a flooding / extreme weather simulation application. User community is climatology, insurance, disaster prevention/response planning and geo-political risk analysis; ie. Predicting human migration due to global warming or economic loss from extreme weather events.