

Energy Efficient (Green) Cloud !

The CompatibleOne Experience

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<http://www.ens-lyon.fr/LIP/RESO/eecloud/>

- CompatibleOne : French Project on Cloud software stack design (Fonds Unique Interministériel (FUI) support : BULL Leader + Mix of SMEs and Academics)
- Integration project (OpenStack, OpenNebula)
- Development project : new software components

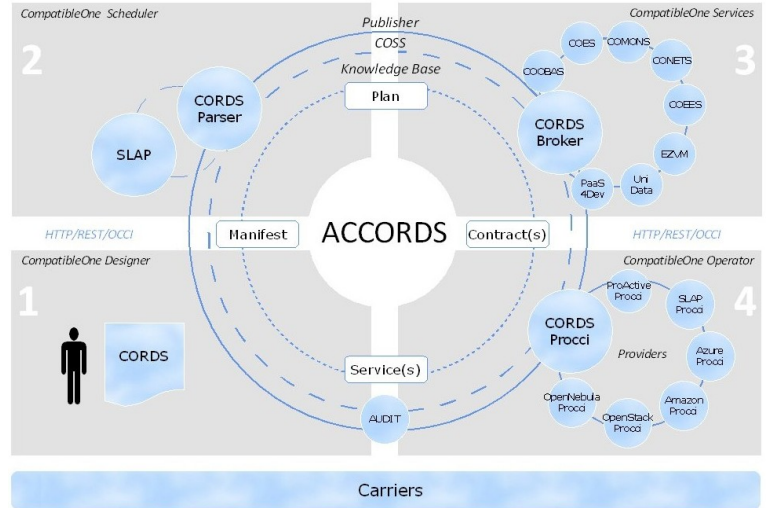


Fig 1 - CompatibleOne architecture

- Energy Monitoring of physical and virtual resources
- Energy usage exposing for users and clouds managers
- Energy monitoring streams for upper layers software

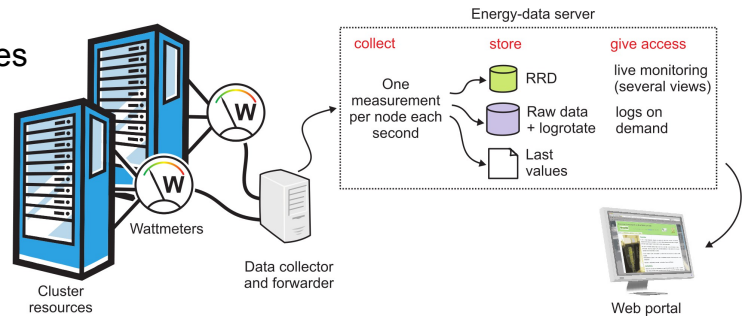


Fig 2 - Cloud energy collect infrastructure

- Design Energy aware software components
- Measures exploitation (Utility)
- Jobs/Tasks distribution / Virtual Machine placement
- Billing
- Infrastructure management
- Carbon footprint evaluation

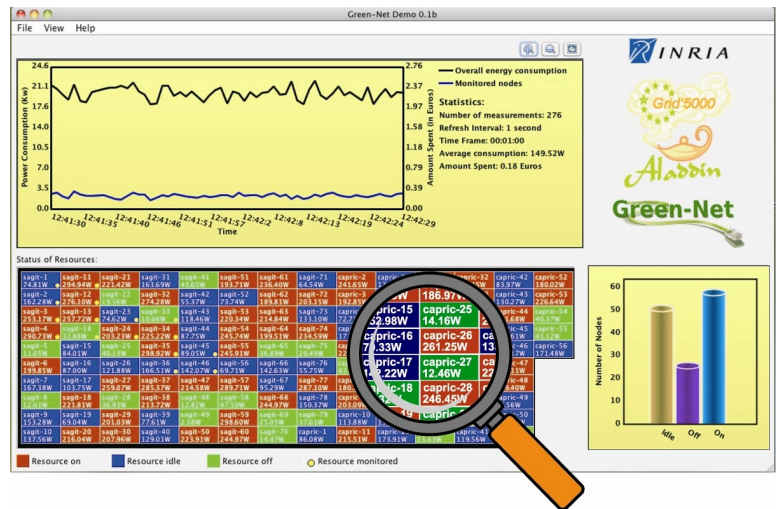


Fig 3 - Showatts software framework