FIT4Green ICT Project Aims To Save Up To 20 Percent Of Energy

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VTT Technical Research Centre of Finland is participating in an EU project FIT4Green which targets to provide at least 20% saving in direct server and network devices energy consumption and induce an additional 30% saving due to reduced cooling needs.

Over 500 million host computers, three billion PCs and mobile devices consume over a billion kilowatts of electricity. It has been estimated that ICT covers 2% of the global CO2 emissions, a figure equivalent to aviation.

On the other hand, ICT also helps reducing energy expenditure from other sources like transportation through videoconferencing, distance working, e-learning and e-commerce. However, this potential reduction is partially offset by the power used by data centres and computer networks. Network and web service providers have electrical costs in the billions of Euros. AMAZON has evaluated its data centre expenses, showing that server costs account for 53%, while energy related costs total 42% (direct power consumption 19% plus amortized power and cooling infrastructure 23%). Even a fraction of energy savings in data centres and networks could lead to reduced financial costs and carbon savings.

The project will create an energy-aware layer of plug-ins on top of the current data centres' management tools to orchestrate the allocation of ICT resources and turning off unused equipments. The plug-ins enhance existing IT solutions deployment strategies by moving computation and services around a federation of IT data centres' sites, without giving up on compliance to Service Level Agreements (SLA) and Quality of Service (QoS).

FIT4Green approach is potentially applicable to any data centre type; the project will run pilots to validate the plug-ins using three representative data centre typologies: service/enterprise portal, supercomputing grid and cloud computing. In addition to plug-ins, FIT4Green will develop fine-grained energy consumption models for ICT components in order to be able to optimize the energy consumption. Business models, e.g. energy-aware SLAs, are also considered.

The 30-month FIT4Green started on the 1st of January. It is coordinated by GFI Informática; HP Italy Innovation Centre is the technological leader. Other partners include University of Passau, Jülich Supercomputing Centre, Imperial College London, VTT Technical Research Centre of Finland, University of Mannheim, Create-Net, Eni S.p.A., and Almende BV. The first results considering single data centre scenario will be available in March 2011.

SOURCE [1]

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