



Adapting Service lifecycle towards Efficient Clouds

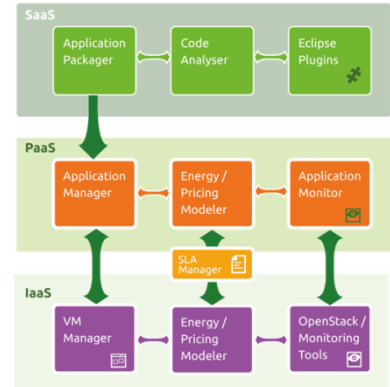
The increased usage of ICT, together with growing energy costs and the need to reduce greenhouse gases emissions call for energy-efficient technologies that decrease the overall energy consumption of ICT. So far, efforts in ICT energy-efficiency have mainly targeted hardware and data centre technologies. However, less attention has been given to software efficiency as it has a direct impact on system's energy consumption. Therefore, it is important to characterize and optimize the energy usage of the complete system, considering software and hardware as interrelated mechanisms.

The ASCETiC project focuses on providing novel methods and tools to support software developers aiming to optimize energy efficiency and minimize the carbon footprint resulting from designing, developing, deploying and running software in Clouds.

The objectives of the project are:

- To extend existing development models for green software design, supporting sustainability at all stages of software development and execution.
- To develop and evaluate a framework with identified energy efficiency parameters and metrics for Cloud services.
- Develop methods for measuring, analyzing and evaluating energy use at software development and execution stages.
- To integrate energy efficiency into service construction

The ASCETiC research project novelties address this specific challenge by covering the full service lifecycle, from design, development, deployment and operation of applications to be executed



in Cloud environments. ASCETiC focuses on the three layers of a Cloud stack (IaaS, PaaS and SaaS) and integrates into it energy efficiency metrics and optimisations, leading to an Energy Efficiency Embedded Service Lifecycle.

ASCETiC research project results are publicly available to download in <http://ascetic.eu>

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