



Network for Cloud Computing Eco-System

As a new paradigm for information technology (IT), cloud computing is “*a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction.*”

At a Glance

CleanSky – Network for Cloud Computing Eco-System

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Cloud computing is evolving and supported not only in small data centers but also over large scale, energy-efficient new computing infrastructures. Example scenarios of large-scale cloud computing include scientific computing and telecommunication services, where big data and traffic are generated and need to be processed in a cost-efficient manner.

In CleanSky, we seek to relax the need for a continuous power source and design high availability techniques to ensure cloud services remain available during unexpected power outages or shortages.

Main Objectives

CleanSky ITN aims to develop innovative ideas in the emerging areas within the “eco-system” of cloud computing: data center evolution, consolidation and service migration, and beyond, via **structural training of young researchers**. To achieve this goal, a unique combination of academic institutions and industrial organizations will collaborate together and create a **multidisciplinary** (computer science, telecommunications, scientific computing and optimization theory), **international** (four European countries plus USA and China) and **intersectoral** (public and private; education and industry) environment to embed a pool of young researchers for innovative research in cloud computing.

The specific S&T objectives of CleanSky are to develop innovative methodologies and approaches (i) to satisfy application requirements and ensure efficiency within the emerging cloud computing paradigm, (ii) to optimize the energy and provisioning costs of individual data centers, (iii) to consolidate, when necessary, multiple data centers to a small set of cloud data center sites through service migration and cloud resource pooling, and (iv) to exploit renewable energy sources in cloud data centers.