

CUTTING EDGE TECHNOLOGY



“In today’s cloud data centres the physical system is composed of individual server units contributing processing, memory, accelerators and storage resources. However, this arrangement incurs a significant waste of these resources as well as low power utilization, due to the inherent inability to closely match user IT requirements to the resources available within a single server or sets of servers. The challenge in this arrangement is to be more efficient, flexible and agile with these resources. The new dReDBox design aspires to remedy this by moving from today’s server-as-the-unit model to a *pooled-computing* model, enabling an arbitrary sizing of disaggregated IT resources, deploying them where and when required, to perfectly match cloud user requirements. By doing so, dReDBox will transition cloud to unprecedented efficiency levels while lowering electric power consumption by up to 20%.”

KOSTAS KATRINIS: PROJECT COORDINATOR

Consortium



dRedBox

A new innovative cloud computing server which will lead to faster processing, better resource allocation and overall lower costs.



The dRedBox Project

A Cloud Computing Server

dredbox.eu
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Benefits of dRedBox

DESIGN

The new dRedBox design aims to speed up memory access using fiber-optic connections while lowering electric power consumption.

USAGE

Data Centres use up to 7% of all electricity generated and this is projected to more than double by 2020.

SAVINGS

The carbon savings of cutting 20% of electricity in data centres is the equivalent of taking millions of cars off the roads, greatly benefiting the environment.

Overview



The dReDBox project – funded under agreement No. 687632 by the EC H2020 programme - aspires to innovate the way we build datacentres today, shifting to employing pooled, disaggregated - instead of monolithic, tightly integrated - components. By doing so, the dReDBox proposition has the ambition to lead to significantly improved levels of utilization, scalability, reliability and power

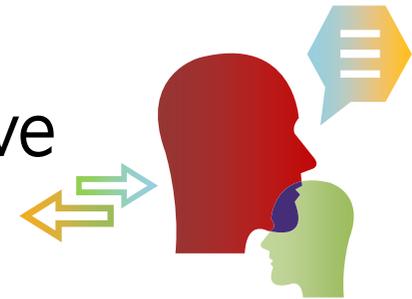


efficiency, both in conventional cloud and edge datacentres.

In today's cloud data centres, the physical system is composed of individual server units contributing processing, memory, accelerators and storage resources. However, this arrangement incurs a significant waste of these resources as well as low power utilisation, due to the inherent inability to closely match user IT requirements to the resources available within a single server or sets of servers. dReDBox aspires to remedy this using a pooled-computing model, enabling an arbitrary sizing of disaggregated IT resources, deploying them where and when required, to perfectly match cloud user requirements. By doing so, dReDBox aims to transition cloud to unprecedented efficiency levels while reducing electric power consumption by up to 20%. The consortium plans to deliver a full-fledged, vertically integrated data centre-in-a-box prototype to showcase the superiority of disaggregation in terms of scalability, efficiency, reliability, performance and energy reduction.



Innovative Thinking



Horizon2020 is the EU funding program for Science and Technology. This research funding is highly sought after and is instrumental in ensuring European research and innovation. The dRedbox consortium is a pan-European organization and its members include Telefonica, University of Bristol, University of Thessaly and the Institute of Computer Science in Greece, Barcelona Supercomputing Center and Naudit from Spain, Sintecs and Virtual Open Systems from France.