Imagine a Big Data application with the following characteristics: (i) it has to process large amounts of complex streaming data, (ii) the application logic that processes the incoming data must execute and complete within a strict time limit, and (iii) there is a limited budget for infrastructure resources.
In today’s world, the data would be streamed from the local network or edge devices to a cloud provider which is rented by a customer to perform the data execution. The Big Data software stack, in an application and hardware agnostic manner, will split the execution stream into multiple tasks and send them for processing on the nodes the customer has paid for. If the outcome does not match the strict three second business requirement, then the customer has two options:
1) scale-up (by upgrading processors at node level),
2) scale-out (by adding nodes to their clusters), or 3) manually implement code optimizations specific to the underlying hardware.

E2Data proposes an end-to-end solution for Big Data deployments that will fully exploit and advance the state-of-the-art in infrastructure services by delivering a performance increase of up to 10x while utilizing up to 50% less cloud resources. E2Data will provide a new Big Data paradigm, by combining state-of-the-art software components, in order to achieve maximum resource utilization for heterogeneous cloud deployments without affecting current programming norms (i.e. no code changes in the original source).

The E2Data innovations will be driven by the requirements of four resource demanding applications from the finance, health, green buildings, and security domains.

Finally, the evaluation will be conducted on both high-performing x86 and low-power ARM cluster architectures representing realistic execution scenarios of real-world deployments.

**Fields of science**

natural sciences > computer and information sciences > software  
natural sciences > computer and information sciences > data science > big data

**Keywords**

- Heterogeneous computing
- Elastic resource provisioning
- Big Data Applications
- Energy Efficiency

**Programme(s)**

H2020-EU.2.1.1. - INDUSTRIAL LEADERSHIP - Leadership in enabling and industrial technologies - Information and Communication Technologies (ICT)
Topic(s)

ICT-16-2017 - Big data PPP: research addressing main technology challenges of the data economy

Call for proposal

H2020-ICT-2016-2017

See other projects for this call

Sub call

H2020-ICT-2017-1

Funding Scheme

RIA - Research and Innovation action

Coordinator

EXUS SOFTWARE LTD

Net EU contribution

€ 503 125,00

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SME

Yes

Region

London › Inner London — East › Tower Hamlets

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

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Participants (8)

THE UNIVERSITY OF MANCHESTER
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Activity type
Higher or Secondary Education Establishments
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Other funding
€ 0,00

EREVNITIKO PANEPISTIMIAKO INSTITOUTO SYSTIMATON EPIKOINONION KAI YPOLOGISTON
Greece
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€ 590 750,00
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DEUTSCHES FORSCHUNGSZENTRUM FUR KUNSTLICHE INTELLIGENZ GMBH

Germany

Net EU contribution

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Activity type

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Other funding

€ 0,00

NEUROCOM LUXEMBOURG SA

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Net EU contribution

€ 505 625,00

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BAMBOO SYSTEMS GROUP LIMITED

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Net EU contribution

€ 610 750,00

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Region

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Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

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INSTITOUTO TECHNOLOGIAS YPOLOGISTON KAI EKDOSEON DIOFANTOS

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Activity type

Research Organisations

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Other funding

€ 0,00

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SPARK WORKS ITC

United Kingdom

Net EU contribution

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Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

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IPROOV LIMITED

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Net EU contribution 

€ 483,625,00

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Yes

Region

London > Inner London — East > Lambeth

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

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Other funding

€ 0.00

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