Energy Optimization of Data Centres at LSI
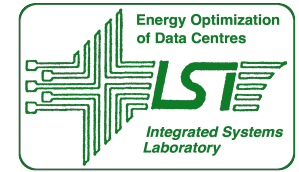SAVING ENERGY BEYOND THE LIMITS
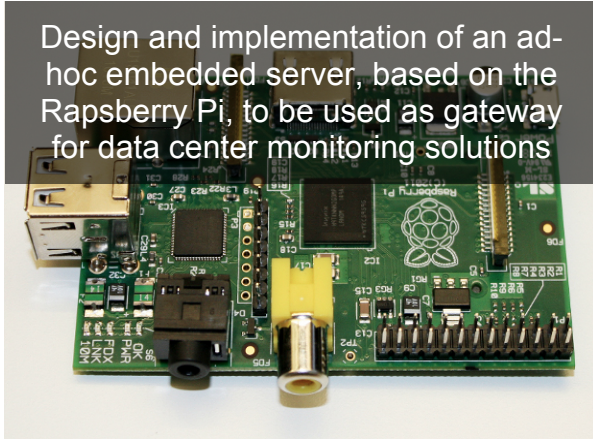
Master Thesis, Final Projects, Collaborations
Proyectos de Fin de Carrera (**PFC**), Trabajos de Fin de Grado (**TFG**), Trabajos de Fin de Máster (**TFM**)

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Energy Optimization of Data Centres
LSI
Integrated Systems Laboratory

Design and implementation of an ad-hoc embedded server, based on the Rapsberry Pi, to be used as gateway for data center monitoring solutions

Design and implementation of an NFC-based solution for data center server inventory

Design of a low-power routing protocol with OTA firmware updates for the deployment of wireless sensor nodes in data center facilities
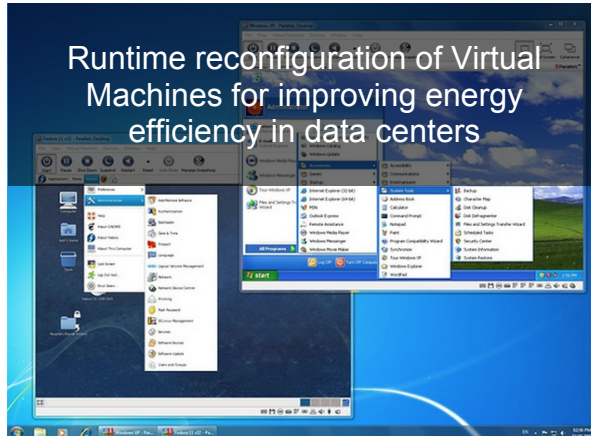
Contact: **José M. Moya <jm.moya@upm.es>**   Tel: **607 082 892**   Room: **B104.1b**

Green Computing techniques to improve the energy efficiency of software applications

Runtime reconfiguration of Virtual Machines for improving energy efficiency in data centers

Obtaining accurante power measurements in enterprise servers

More info: http://greenlsi.die.upm.es/

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Design and implementation of an ad-hoc embedded server, based on the Rapsberry Pi, to be used as gateway for data center monitoring solutions

Re-design and re-route a RPi-based module

- ● Add SATA
- ● Add CC1110 radio
- ● Add USB connectors
- ● Add redundant
  power supply
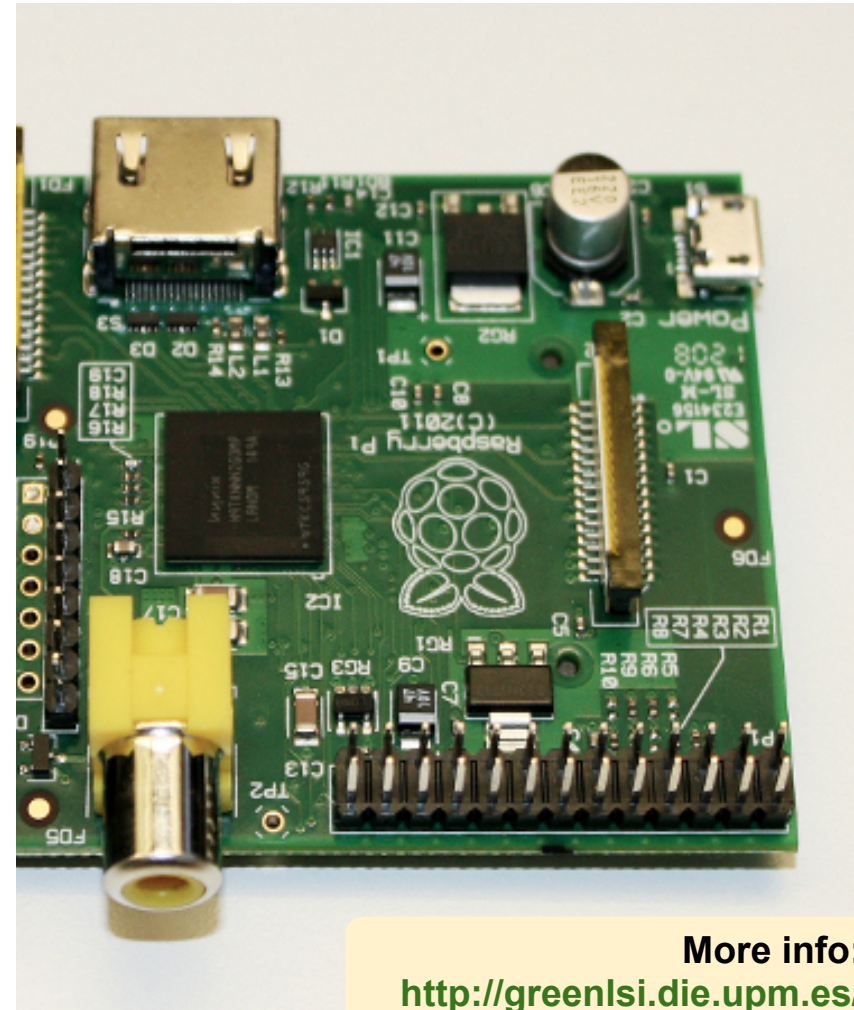
Contact Marina Zapater

More info:
http://greenlsi.die.upm.es/

Energy Optimization of Data Centres at LSI
SAVING ENERGY BEYOND THE LIMITS

Design and implementation of an NFC-based solution for data center server inventory

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Automatically identify the servers installed in a rack and update the data center inventory

- Intelligent racks
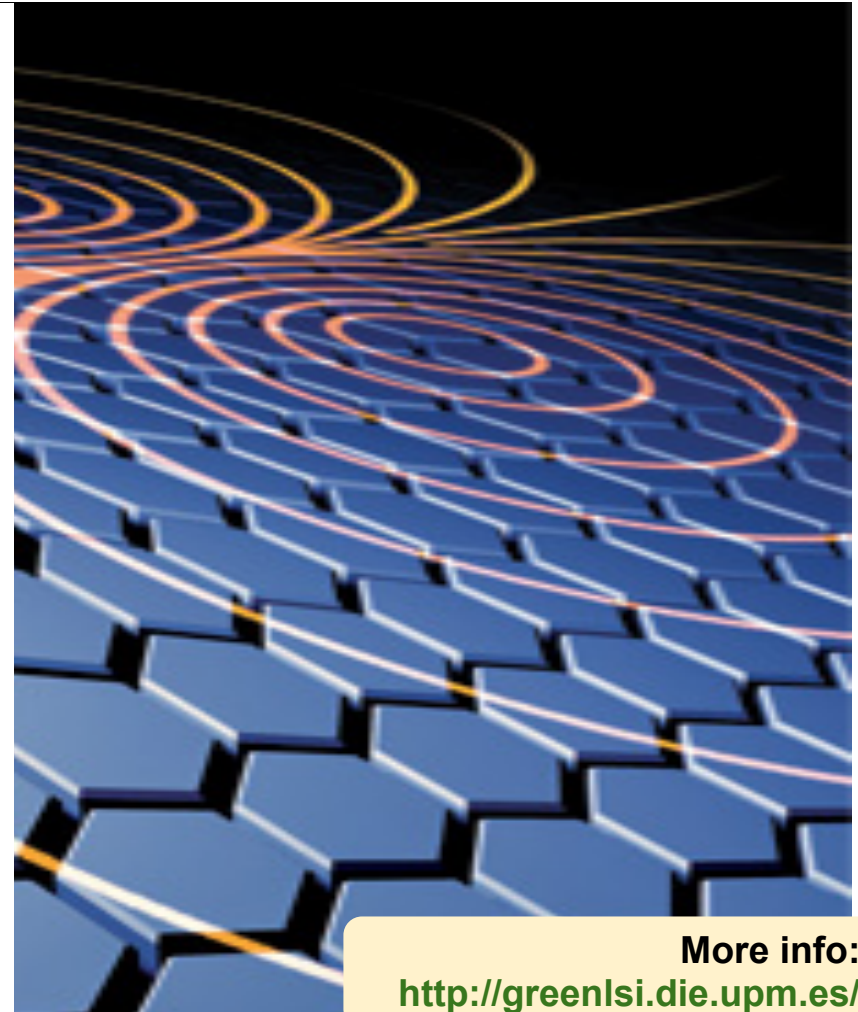- Assets discovery
- RT inventory

Contact Marina Zapater

More info:
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Design of a low-power routing protocol with OTA firmware updates for the deployment of wireless sensor nodes in data center facilities

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Over-The-Air firmware update of wireless sensor networks

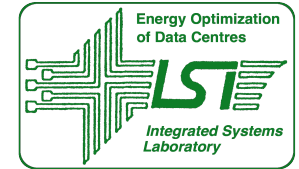- Synchronous protocol
- Battery-operated nodes
- Avoid bad data

Contact José M. Moya

More info:
http://greenlsi.die.upm.es/

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Green Computing techniques to improve the energy efficiency of software applications

Software transformations to minimize energy consumption without increasing the execution time

Contact Pedro Malagón

More info:
http://greenlsi.die.upm.es/

Runtime reconfiguration of Virtual Machines for improving energy efficiency in data centers

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Enhance KVM virtual machine with the LLVM dynamic optimization framework

- More flexible VM
- More optimized VM
- Easy VM extension

Contact José M. Moya

More info:
http://greenlsi.die.upm.es/

Energy Optimization of Data Centres at LSI
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Obtaining accurante power measurements in enterprise servers

Exhaustively characterize the energy consumption of enterprise servers

● Invasive methods on Sun V20z

● CPU, memory, and fans

Contact Marina Zapater

More info:
http://greenlsi.die.upm.es/