University of *Ljubljana*

University of Ljubljana
Fri Faculty of
computer and
information science

ENERAPTOR

Making your data center greener on a low budget

Graph

Find out more at:

zeleniIT.fri.uni-lj.si

Or contact us directly:
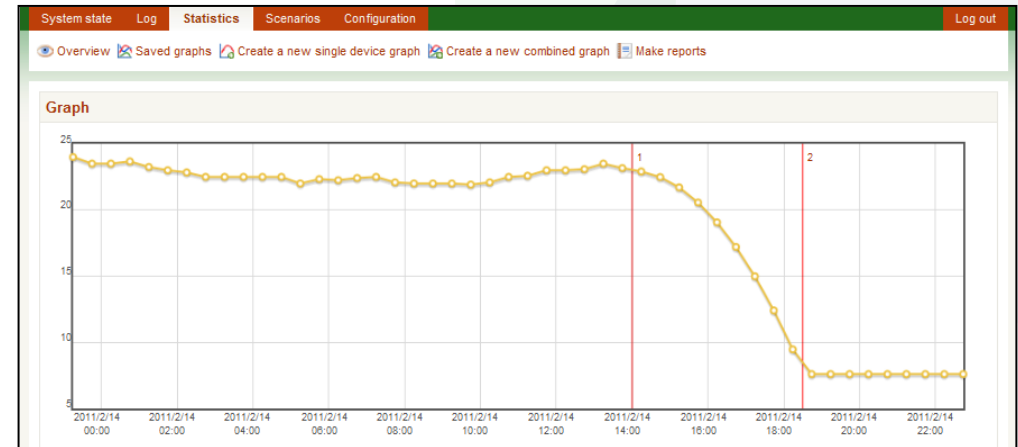
eneraptor@fri.uni-lj.si

Did you know, that with our inexpensive solution you can save up to 30%* of energy?

We look forward to hearing from you!

- The Eneraptor Team

* This was the result of a case study we did at our lab's small server farm. We lowered the power consumption by smartly adjusting key parameters of the system, including controlling the air conditioners working capacity and turning off unneeded servers at off-peak times.

The results may vary wildly due to different scenarios in play. For more information please check out our presentation material or contact us:

Who are we?
We are a group of 4 students, studying at University of Ljubljana, Faculty of Computer and Information Science, Slovenia. To find out more about our small, but very green country, visit *www.slovenia.info*!

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1 Mr. Smith works at a small data center. He is also responsible for keeping this data center's electricity bill as low as possible.

2 Up until now an air conditioner worked 24 hours a day, every day.

3 He recently learned that thinking greener can also make the bills lower. He immediately convinced his boss to invest little money to buy Eneraptor.

He installed a small card and connected various devices to it. The installation was easy - he only had to download some drivers and device managers from the Internet and install a web **4** application on one of the servers.

Now, when the room's temperature is too high, the Eneraptor's decision-making software compares the indoor and outdoor temperatures. If the temperature outdoor is lower, it opens windows, to cool the room. **5**

While lowering the costs you also help protecting our planet. In recent years it has become evident, that we all have to do our part in minimizing our energy consumption. We concentrate on power use and dissipation in data centres, where we feel more could be achieved. Minimization of the power used by the servers is already a known problem within the scientific community, and we have focused our efforts on the redundant cooling systems.

6 Only when there are no other ways to cool the room, the air conditioners are turned on. Otherwise they are turned off, sparing the energy they would consume normally.

Now Mr. Smith can simply connect to the Eneraptor's user interface using a browser. He can configure, monitor and control the whole system remotly. Indeed, he can also trigger some actions manually. **7**

Eventually, Mr. Smith went to a well earned vacation. And even while he was so far from home, he could still access the whole system using just a web browser! **8**

Soon the company grew and more cooling devices were needed. Once again, there is no problem: Mr. Smith adds another Eneraptor card, which he can access through the same HCI as before. Having complete control of the company from one single place. **9**

Eneraptor
The GreenIT project

System state | Log | Statistics | Scenarios | Configuration | Log out

Overview | Saved graphs | Create a new single device graph | Create a new combined graph | Make reports

Graph

Legend:
AVERAGE temperature PER HALF HOUR on 31.1.