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# “Greening” the Cloud

In Europe, datacentre power consumption is equivalent to the entire consumption of a country the size of The Netherlands, and it has roughly doubled over the last 6-7 years.

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--- Posted by Tony Gore, project Manager of FP7 Project EuroCloud [1]

With the rise in mobility in computing e.g. smartphones, tablets etc, the amount of computing concentrated in remote systems such as datacentres is rapidly increasing. However, these datacentres are always on, 24/7, with standby power generators. The power consumption of these datacentres is more or less constant, whether they are working hard or idle.

In Europe, datacentre power consumption is equivalent to the entire consumption of a country the size of The Netherlands, and it has roughly doubled over the last 6-7 years and will do so again by 2020. A modern datacentre often consumes more power than a small town.

What the EuroCloud [1] project does is to use similar chips to those in mobile phones, which are much more efficient. Naturally they are not as powerful as a state of the art server chip, so more of them are required to do the work. But by using them more efficiently, and designing for low power from the outset, we can achieve the same overall performance in a datacentre, but using about 10% of the power. Lower power chips require less cooling, smaller standby polluting diesel power generators. They also use less power when idle, again reducing waste and emissions and offer more flexible operating regimes.

EuroCloud based servers are also cheaper to build and run, so the total cost of running a datacentre over its lifetime is also considerably reduced. Thus not only can we do the same for less power, we can save money and CO2 emissions in the process. This reinforces the competitive advantage that can be gained from cloud based services in the future.

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