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OCP Regional Summit | April 19, 2023 | Prague, CZ



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Cloud infrastructure: it has to work, and it has to be sustainable ... Surely this is not impossible!

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The 2 Points Background

European cloud platform software vendor; Sardina
FishOS builds on OpenStack, Kubernetes, Ceph

Building sustainability solutions for clouds since 2014



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Cloud infrastructure should

Deploy quickly, easily

Operate flexibly and efficiently

Upgrade while the system is running

without long consultancy, massive consulting bill!

What do we have?

✓ quickly and easily

Deploy: 2-cups-of-coffee time

✓ flexibly

Operate: run flexibly with full suite of operations tools

Upgrade: Zero-Downtime

✓ reliably

but ... efficiently?

definitely without long consultancy, massive consulting bill!

Efficiency?

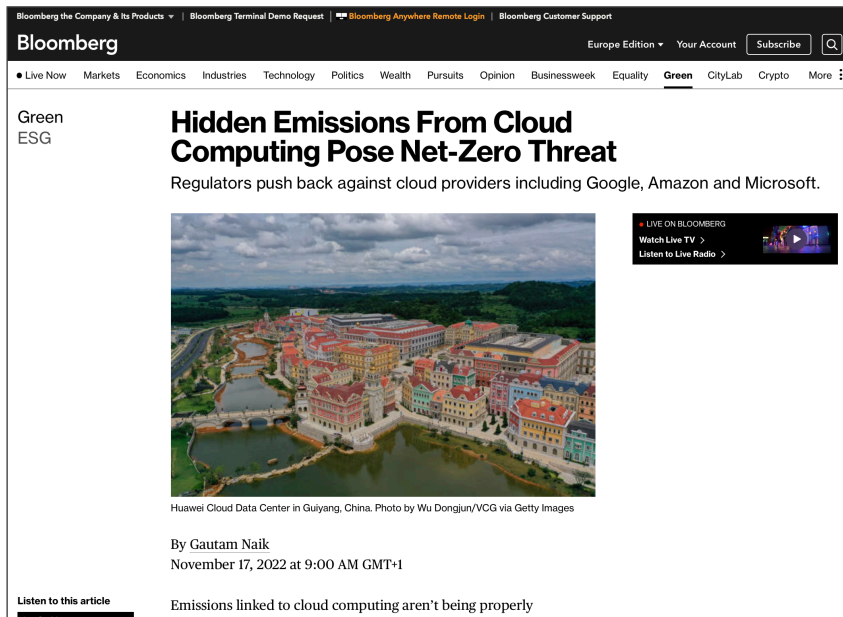
Folks, we have a problem with energy and carbon



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Can we not just move to public cloud?



Moving to public cloud is clearly **not** the answer!

Power Usage Effectiveness (PUE)

$$\text{PUE} = \frac{\text{total power entering a data center}}{\text{power used to run IT equipment}}$$

Metric used to determine the energy efficiency of a data center

With improvement of overall efficiency, PUE decreases toward 1.0

Of course, ideal PUE is 1.0

Where are we today?

Data centers are now running at PUE nearing 1.0

But are we already at the most optimal point?

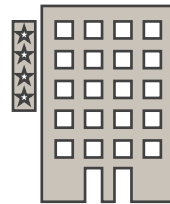
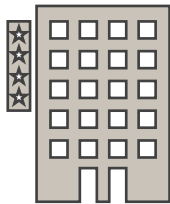
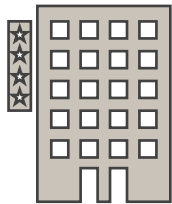
Let's look at an analogous problem ...



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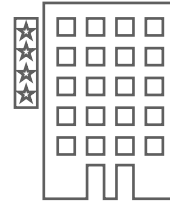
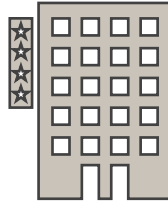
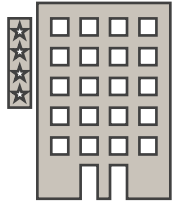
If we have 3 adjacent hotels ...



If electricity usage in each hotel is 100% efficient, does it mean that we are optimal?

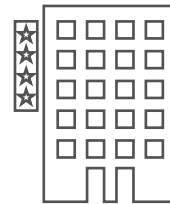
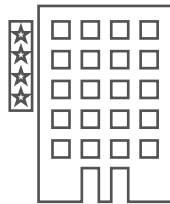
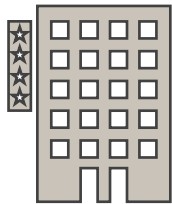
Surely not, if occupancy is not factored in!

If based on the number of occupants, they can be placed into 2 buildings ...



We can turn off electricity in the other 1 building, overall energy efficiency will be improved

If the number of occupants change, and can be placed into 1 building ...



We can turn off electricity in the other 2 buildings,
overall energy efficiency will be even further improved!

Energy consumption is most optimal when energy is not consumed!

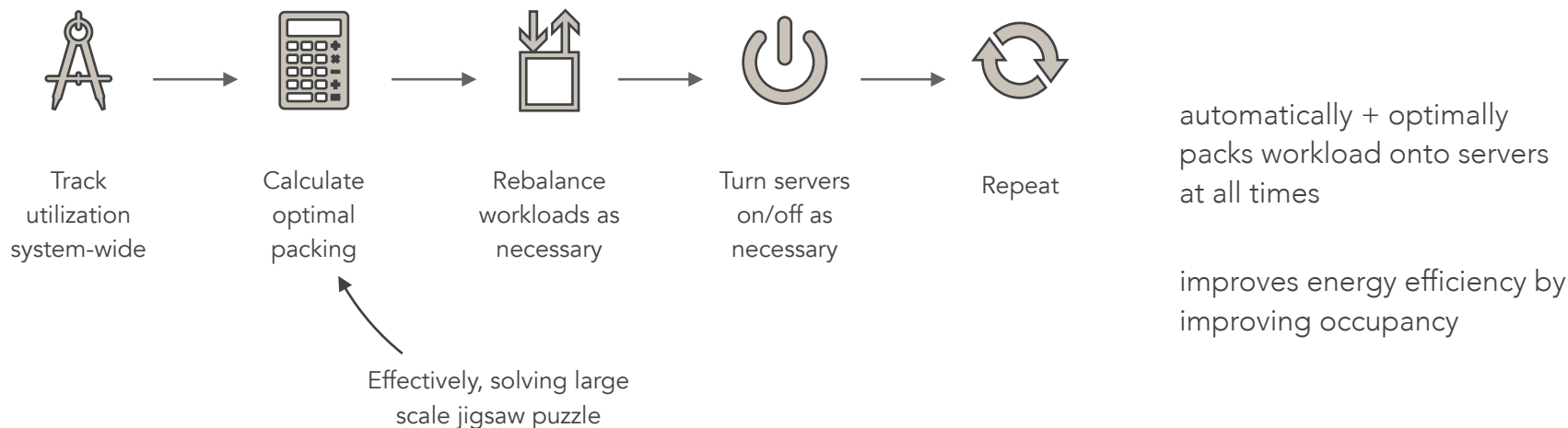


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How to make a cloud infrastructure work sustainably?



The greenest energy is the energy consumed

Curious?

Come talk to me ...

no worries, curiosity doesn't kill the cat (in this case)





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