Notes regarding power measurement of Archivematica

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## Procedure

1. Launching AM locally using Docker
   1. Followed these intrs
      1. <https://github.com/artefactual/archivematica/tree/stable/1.14.x/hack>
2. Powerstat command:
   1. sudo powerstat -R .5 5000
   2. Sampling every half second 5000 times
3. Convert output to .csv
   1. python powerstat-result-formatter.py results.txt results.csv
   2. [powerstat-result-formatter.py](https://gist.github.com/sbreker/a752a51130576c5d8587dc1ceb99b43a)

Notes from running AM to get PowerStat outputs: [SCI of Archivematica process documentation](https://docs.google.com/document/d/1Tkge1TRyd36ioTxy-5n5uH_kplLDQGO7aWtSQYqwmmY/edit?usp=sharing)

## Resources

* Blog post showing sampling of power usage over time, subtracting baseline from processing
  + <https://blog.theodo.com/2020/05/greenit-measure-server-energy-consumption-powerapi/>
* Blog post with a section on collecting data with powerstat (search for ‘powerstat’)
  + <https://luiscruz.github.io/2021/07/20/measuring-energy.html>
* PowerAPI
  + Failed to get this working on OVH VM
  + I tried to use this to collect the measurements but I could not get it working with my laptop’s processor type:
    - <https://powerapi.org/>
* Steve’s laptop’s processor type
  + Dell XPS 9510
  + 11th Generation Intel Core i7-11800H - TIGER LAKE
  + <https://ark.intel.com/content/www/us/en/ark/products/213803/intel-core-i711800h-processor-24m-cache-up-to-4-60-ghz.html>
* Blog post showing a type of calculation of power consumption for OVH servers
  + Not sure how relevant
  + <https://blog.overton.io/calculating-our-carbon-footprint-a-work-in-progress>
* Emma’s review summary doc
  + <https://docs.google.com/document/d/1PVGhaGr_CEmPqojnrFRENvFrQecw1-NnpkuToIfmxrE/edit#heading=h.3yny2xn2q7w5>
* Microsoft
  + How to measure and reduce the carbon footprint of your application
    - <https://www.microsoft.com/en-gb/industry/blog/technetuk/2021/10/12/how-to-measure-and-reduce-the-carbon-footprint-of-your-application/>
  + The Principles of Sustainable Software Engineering
    - <https://learn.microsoft.com/en-gb/training/modules/sustainable-software-engineering-overview/>
* SCI Calculation links
  + <https://www.thoughtworks.com/en-ca/insights/blog/ethical-tech/calculating-software-carbon-intensity>
  + <https://learn.greensoftware.foundation/measurement/>
  + <https://sci-guide.greensoftware.foundation/>
* From OVH
  + <https://corporate.ovhcloud.com/en-ca/sustainability/environment/>
  + <https://www.datacenterdynamics.com/en/news/ovhcloud-to-report-scope-3-emissions-to-customers/>