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Memset Environmental Policy 2019

Lean and Green:

For many years at Memset Ltd. we have recognised that we use a great deal of electricity to run servers for our customers, and also that he manufacturing of computer hardware is itself a very energy and carbon-intensive process. Using more efficient servers and less electricity also saves us money, so there really is no excuse to not be efficient - lean and green!

Our approach to managing our environmental impact is compliant with ISO 14001:2015, and is broadly described below.

Carbon Neutral ® Hosting:

In August 2006, Memset® became the UK's first Carbon Neutral® Web host. In becoming Carbon Neutral, we worked with The CarbonNeutral® Company to identify our 'carbon footprint', or the approximate volume of CO2 generated by the organisation. It is calculated by assessing energy usage, business travel, and all components of the company's operations that consume power or generate waste and by-products. Memset® uses a very large amount of electricity to power servers, which forms the vast bulk of our carbon footprint.

The next stage in the process was to explore ways to reduce this footprint and energy use wherever possible. This included a review of current suppliers to explore the viability of using 'green' suppliers or energy from renewable resources, and also examined efficiency technologies already in use, (such as our Cloud VPS). Finally, in order to 'neutralise' unavoidable CO2 emissions, we were required to support a range of 'offset projects' to absorb or save the same amount of CO2 emissions as were being created.

Memset currently supports the Danjiang Rivar Solar Cookers Project in China. This project as with all previously supported projects is carefully monitored and measured by the Carbon Neutral Company to ensure their carbon figures are accurate. We ourselves continue to be audited annually by the Carbon Neutral company and we are committed to minimising our environmental impact across the board – not just indirect greenhouse gasses.

Energy Efficiency Policy:

We adhere to best practices for data centres where ever possible, which stipulate a comprehensive range of key principles for data centre operators and hosting providers. These measures include power provision, cooling, good use of virtualisation, selection of efficient software, multiple tenders for selection of servers and much, much more. Our energy efficiency measures have three main areas:

1). Data centre

Servers use a great deal of electricity so we have taken a number of steps to minimise this. Our Dunsfold data centre was specially designed to be highly energy-efficient while also adhering to the highest government security standards.

It employs adiabatic free cooling, taking advantage of the fact that it never gets hot and humid at the same time in the UK. The “wet bulb” temperature (the temperature of something wet) never goes above about 23oC, even on the hottest Summer days. During such conditions our system sprays a fine water mist into the air handling units (essentially big radiators) on the roof, keeping them at the wet bulb temperature.

There is normally about a 10 oC variance between external and internal temperatures, so to take full advantage of the adiabatic free cooling we allow temperature excursions of up to 35 oC inside the data centre. Although this goes against conventional wisdom, modern servers are warrantied to 45 oC and there is not a significant increase in failure rates in higher temperatures. This is also in accordance with ASHRAE guidelines at the point of implementation and the system was accredited by CESG to the old IL3 standard.

When reviewing the stated worst case scenario the UK is expected with regards to global warming, the wet bulb temperature is expected to never get very high in the UK. Because of this we don’t need backup DX cooling (traditional air conditioning), saving money and carbon emissions. The one area we do have DX cooling for is the plant room since the UPS batteries need to be kept at a constant temperature. By keeping the plant room separate, we have been able to keep that requirement to a minimum.

Our main data centre is on Dunsfold Park, one of Europe’s leading sites for environmental innovation. We are practically next door to their 2MW solar farm from which we derive a significant proportion of our power.

Our Reading data centre is also very energy-efficient. Both sites use modern high-efficiency UPS’s and cooling systems within the building. Both also comply with the relevant recommendations of the European Union Code of Conduct for Data Centres.

We also monitor the power usage of all racks and actively manage the power distribution which maximises energy efficiency within the data centres by eliminating hot/cold spots.

2). Servers

We source servers based in part on their energy-efficiency: in the last three years the amount of electricity an average server uses has roughly halved, but the amount of work they can do has increased by two to four times. We believe in spending a little extra on hardware to get the latest in energy-efficient machines, and gain the cost-savings in the long term through reduced power bills. We currently have a policy of replacing outdated hardware after four years since Moore's Law makes replacing them economically and environmentally sensible.

3). Virtualisation

Thirdly, we use a lot of virtualisation in the form of our Cloud VPS and Cloud IaaS. What this means is that rather than having one server (one box) doing one task we

have lots of smaller Cloud VPS on one server each doing a task, so that we need many less machines overall.

We have an ongoing programme to continually look at the lifecycle carbon impact of our services. In particular, this has helped us optimise our Cloud VPS platform to squeeze the most out of our hardware. For example, most people think that compute/CPU is the limiting factor whereas it is actually RAM or disk IO. Our Cloud VPS are all SSD-based as a result and have additional RAM.

Reusing and Recycling Servers:

There is a constant turn over in our server pool, and most servers just get reused by re-allocation to new customers, but after about four years it becomes economically and environmentally unsound to "sweat the asset". At this TechRecycle for WEEE compliant disposal.

All server storage devices are comprehensively erased (by writing zeros to the entire disk several times) before they leave our control.

Paperless Office:

Recycling paper is all well and good, but in reality, recycling paper is actually quite energy intensive. Therefore, the best thing to do with paper is to use as little as possible, which is what we do. We have an "avoid paper" policy, and all our documents and systems are electronic in our private intranet. We strive to only print things that we are required to keep in hard-copy form by law, but even that is a good form of carbon sequestration.

Transport:

We encourage flexible and remote working for all staff within the organisation to reduce the amount of travel, but when they need to travel, we encourage staff to commute in an environmentally friendly fashion. This is assisted by providing them with a free shuttle-bus service from Guildford to Dunsfold and a cycle to work scheme.

More Than Words:

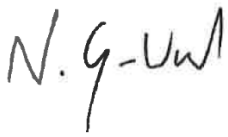
As with any policy, there is always a danger that the words will be written, heard at a staff meeting, and then filed away never to be seen again.

At Memset®, however, we have the advantage of being owner-managed. Being passionate environmentalists, the leadership take a personal lead and commitment to our environmental responsibility, environmental management systems and their performance. This ensures that we strive for optimal efficiency, increased protection of the environment though least wastage and continued legal compliance in everything we do through the assessment of objectives and targets and continual improvement.

In order to achieve these commitments and to provide a formal framework for managing our environmental objectives, we have implemented an Environmental Management System that has, and continues to be, certified to the ISO14001:2015 standard.

We are an environmentally conscious organisation with a real passion for sustainability.

Executive Approval:



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