



SME/HPC project High Performance Computing

High Performance Computing (HPC) allows for big data to be processed with unprecedented efficiency. This **emerging technology** is a game-changer for both academia and businesses. While most advanced HPC infrastructures and knowledge are located at HEIs and research institutions, enterprises, especially SMEs, have little or no access or competences to use it, in spite of remote access. In fact, few organisations are aware of the potential of how HPC can drive **enterprises' competitive advantage** and enhance the levels of innovation capacities, capabilities and practices of SMEs. This leads to both the under-utilisation of existing expensive infrastructure and the less-than-optimal solving of real-life socio-economic issues.

So what exactly is HC?

According to insideHPC¹, *“High Performance Computing most generally refers to the practice of aggregating computing power in a way that delivers much higher performance than one could get out of a typical desktop computer or workstation in order to solve large problems in science, engineering, or business”*.

You may have heard of supercomputing, and monster machines from companies like Cray and IBM, that work on some of mankind's biggest problems in science and engineering such as the 'origins of the universe, new cancer drugs, and that sort of thing'. These are very exotic machines by virtue of the technologies inside them, and the scale at which they are built: sometimes

more than 10,000 processors make up a single machine. For this reason supercomputers are expensive, with the top 100 or so machines in the world costing upwards of €20m each. However, this kind of computing in relation to SMEs is akin to relating a Formula 1 car to a small family car.

Supercomputers take vast sums of money and specialised expertise to use, and they are only good for specialised problems. On the other hand, a High Performance Computer can be used and managed without a lot of expense or expertise. While an HPC machine is more complex than a simple desktop computer, the basics are not that much more difficult to grasp. Also there are many companies (big and small) and Higher Education Institutions that can provide as much or as little help as you need to engage with HPC.

HPCs are simply clusters of computers that small and medium-sized companies can use with ease and at low costs.

If you want to **learn more about HPCs** as to how they can be used to improve the capabilities and capacities of your organisation (regardless of whether you are working in a government agency, business, a manufacturing or service industry, or in education) contact:

Mandy at mandyhmar@gmail.com or Sergio at sbotelhoj@gmail.com or Bill at wogorman@wit.ie

¹ <https://insidehpc.com/hpc-basic-training/what-is-hpc/>



More about **what is HPC** is available **HERE**:
<https://insidehpc.com/hpc-basic-training/what-is-hpc/>

To learn more **about the project**, please visit
our **Webpage**: <https://www.sme-hpc.eu/>.

Partners of the project:



Follow us on:



<https://www.sme-hpc.eu/>
<https://www.facebook.com/sme-hpc/>
https://twitter.com/sme_hpc

"The European Commission's support for the production of this publication does not constitute an endorsement of the contents, which reflect the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein."