



**Barcelona  
Supercomputing  
Center**  
*Centro Nacional de Supercomputación*



**10X** power reduction  
with Intel Optane PMem  
compared to DRAM DIMMS.<sup>1</sup>

“We’re trying to reduce server power while accelerating applications by using Intel Optane PMem and intelligently managing where the data is located and its movements. We can take advantage of the big memory footprint that the new technology offers and put more data closer to the processor.”

**Antonio Peña, senior  
researcher, Barcelona  
Supercomputing Center**

# Barcelona Supercomputing Center Research Accelerates HPC Workloads

Barcelona Supercomputing Center is at the heart of innovative hierarchical memory research. High Performance Computing (HPC) applications are constrained by the amount of DRAM. They need more memory, but adding more DRAM with the current technology is not feasible due to system power constraints. A team lead by Antonio Peña is using Intel® Optane™ persistent memory in App Direct mode as large capacity, manageable system memory with data objects intelligently allocated to optimize the performance of applications. The team is collaborating with Intel to help build a new software ecosystem around byte-addressable persistent memory to accelerate HPC applications while enabling more power-efficient supercomputers.

## Products and Solutions

[2nd Gen Intel® Xeon® Scalable processors](#)  
[Intel® Optane™ persistent memory](#)

**Industry**  
Research

**Organization Size**  
501-1.000

**Country**  
Spain

**Learn more**  
[Case Study](#)

<sup>1</sup> For more complete information about performance and benchmark results, visit <https://www.intel.com/content/www/us/en/customer-spotlight/stories/barcelona-supercomputing-center-customer-story.html>