High Performance Computing (HPC) and industry

Many organisations are now using HPC as an essential part of their business strategy. HPC can help them to design new products, optimise manufacturing and delivery processes, solve production problems, mine data and simulate processes, in order to become more competitive, profitable and “green”.

This is done applying compute cycles in order to solve problems in the fastest way: a problem that can take days on a laptop can be solved in a few minutes on a supercomputer.

Which industrial sectors are using HPC today?

- **Bio-sciences**: drug discovery, disease detection and prevention
- **Computer-aided engineering (CAE)**: mechanical design and testing
- **Chemical engineering**: process and molecular design
- **Digital content creation (DCC)**: computer aided graphic in media
- **Economics/financial**: financial risk analysis
- **Electronic design (EDA)**: electronic component design and verification
- **Geo-engineering**: oil and gas exploration modeling

Barcelona Supercomputing Center - Centro Nacional de Supercomputación