High Performance Computing is defined as aggregation of processes for delivering higher and efficient performance as compared to other desktop Workstation or computer helping the companies to solve problems related to engineering, business or sciences.

Barcelona Supercomputing Center as a result of research projects with academia and with companies offers a wide range of HPC industrial applications focusing on the increase of demand in different application sectors as you can see in the graphic.

Thanks to BSC main research areas, BSC is offering HPC solutions to different industrial sectors:

- From **Computer Sciences** Department BSC is offering solutions based on
  - programming models, performance tools and energy efficient hardware destined to Mobile sector, to HPC companies and Data Centers
  - solutions based on middleware systems software to HPC companies, Smart city, IoT, Cloud and Big Data
  - solutions based on Embedded electronics for improving safety in time-critical applications to Automotive, Rail, Aviation and space sector.
- From **Computer Applications in Science & Engineering** Department, BSC is developing HPC simulations of complex problems to energy and renewables sector, pharma and medical sector, engineering, smart cities, nautical, automotive and aviation sector.
- From **Earth Sciences** Department BSC is offering Air quality, weather and climate modelling products to Weather Services and Climate Agencies, renewables and Agriculture, and Smart City and Big Data sector.
- From **Life Sciences** Department BSC is offering bioinformatics tools for target and drug discovery to
Pharma and Medical sector.

**BSC TECHNOLOGICAL PORTFOLIO**

- Pharma
- Medical
- Smart cities
- Big Data
- Weather / Climate Agencies
- Renewables
- Agriculture
- Renewables
- Medical
- Nautical
- Oil & Gas
- Engineering
- Automotive
- Pharma
- Smart Cities
- Aviation
- Automotive
- Aviation

- Bioinformatic tools for target and drug discovery
- Programming models, performance tools & energy efficient hardware
- Air quality, weather and climate modelling products
- Simulations of complex problems
- Embedded electronics for improving safety in time-critical applications

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