

# BigHPC Project

A Management Framework for Consolidated Big Data and HPC

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# BIGHPC



Cofinanciado por:



# The Project

A MANAGEMENT FRAMEWORK FOR CONSOLIDATED BIG DATA AND HPC

## MISSION

BigHPC will simplify the management of HPC infrastructures supporting Big Data and parallel computing applications. The project will have a direct impact on science, industry and society, by accelerating scientific breakthroughs in different fields and increasing the competitiveness of companies through better data analysis and improved decision-support processes.

The BigHPC project aims at improving the management of HPC data centers and supported Big Data applications, with the following novel features:



Monitoring



Virtualization



Software-Defined Storage

## CONSORTIUM

The BigHPC consortium is composed of six partners from academia and industry. It includes three academic internationally renowned research partners, INESC TEC and LIP (PT), UT Austin (USA), one industrial partner, Wavcom (PT), and also two different advanced computing centers MACC (PT) and TACC (USA).



This project will advance the current knowledge and develop new tools to address three different challenges in HPC infrastructures, namely the monitoring, virtualization and storage management components.

Bruno Antunes, BigHPC's Research Manager

## Expected Outcomes

DEVELOPMENT OF AN INNOVATIVE SOLUTION TO EFFICIENTLY MANAGE PARALLEL AND BIG DATA WORKLOADS THAT:

1

COMBINES NOVEL MONITORING, VIRTUALIZATION AND SOFTWARE-DEFINED STORAGE COMPONENTS

2

CAN COPE WITH HPC'S INFRASTRUCTURAL SCALE AND HETEROGENEITY

3

EFFICIENTLY SUPPORTS DIFFERENT WORKLOAD REQUIREMENTS WHILE ENSURING HOLISTIC PERFORMANCE AND RESOURCE USAGE

4

CAN BE SEAMLESSLY INTEGRATED WITH EXISTING HPC INFRASTRUCTURES AND SOFTWARE STACKS

5

WILL BE VALIDATED WITH PILOTS RUNNING IN BOTH MACC AND TACC SUPERCOMPUTERS