

Building a Research-Enabled Campus



Today's researchers have the ability to turn petabytes of information into meaningful discoveries. All they need is a computer powerful enough to process it.

This power, historically reserved for the realm of theoretical science, is now available to all – economists and sociologists, engineers and anthropologists, linguists and historians. High-performance computing (HPC) fuels groundbreaking research in a variety of disciplines today.



Black holes and dying stars

Using HPC, scientists can safely simulate what might happen in close proximity to a black hole, as well as the conditions under which they arise.

Discoveries about black holes aren't the only scientific advances made possible by supercomputers.

2,800

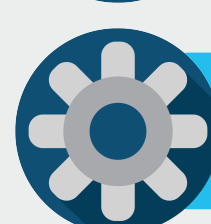
*Light Years
Distance to the
Closest Black Hole*

HPC can fuel many types of **research** in the **natural sciences**, including:



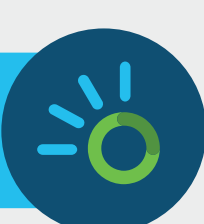
Molecular modeling

Climate forecasting



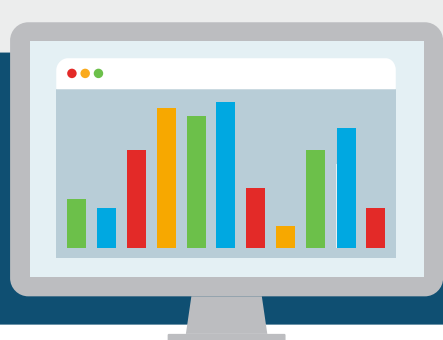
Quantum mechanics

Nuclear interactions



Aerodynamics

Genomics



To err is human, to understand is big data

If unraveling the mysteries of the cosmos seems like a daunting task, try demystifying the paradoxes of human behavior. The amount of data points to consider is staggering.

With trillions of interactions and transactions occurring online, economists and behavioral scientists are using HPC to run big data applications to analyze all that information.

What can they **do with it**?

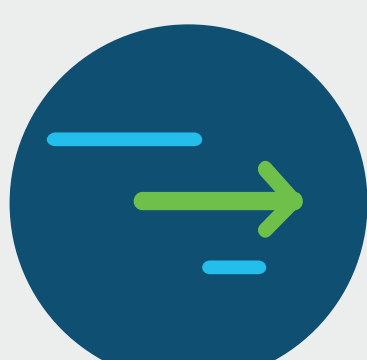


Talk nerdy to me

What about the social sciences and humanities? Let's take linguistics. Can HPC advance the study of accents, phonetics, and speech patterns?

With HPC, linguists can apply their analyses to billions of tweets, blogs, articles, and books posted online.

With HPC, **they can**:



Note accent shifts using tweets from different regions

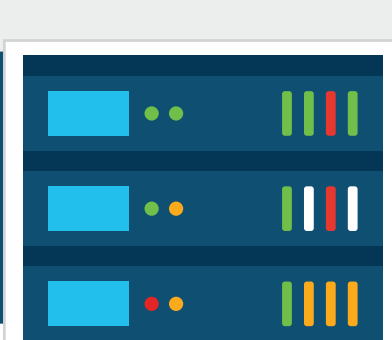


Compare millions of articles to note stylistic trends over time



Determine differences in meaning and interpretation across languages.

They're already doing it.



It's not as hard as you think

Your data center may already contain a lot of the networking, storage, and compute power you need to deliver HPC.

Building up a shared data center infrastructure for IT services and HPC is an effective way to get the best of both worlds: groundbreaking research and outstanding user experience on the applications your students and professors are using each and every day.

Ignite innovation and ensure exceptional experiences with simple, automated, secure Cisco Data Center solutions that embrace hybrid transformation to enhance teaching, learning, and research.

[Learn more](#)

