China claims world's fastest supercomputer

A Chinese supercomputer now tops the rankings ahead of its U.S. counterparts as the world's most powerful for the first time since 2017. *LineShine* can make up to 2.198 quintillion calculations per second

WORLD'S FASTEST SUPERCOMPUTERS

Exaflops / Cores

LineShine CHN — ***2.198***
National Supercomputing Centre Shenzhen — *13,789,440*

El Capitan USA — ***1.809***
Lawrence Livermore National Laboratory — *11,340,000*

Frontier USA — ***1.353***
Oak Ridge National Laboratory — *9,066,176*

Aurora USA — ***1.012***
Argonne National Laboratory — *9,264,128*

JUPITER Booster GER — ***1.000***
Forschungszentrum Jülich — *4,801,344*

EXASCALE
Only five exascale computers in existence

HPC7 ITA ***0.572*** *Eni Green Data Centre* *3,461,472*

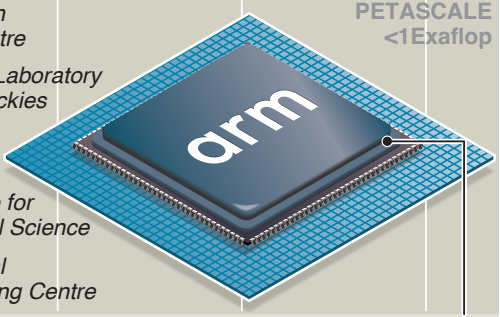
Eagle USA ***0.561*** *National Laboratory of the Rockies* *2,073,600*

HPC6 ***0.478*** *Eni Green Data Centre* ITA *3,143,520*

Fugaku ***0.442*** *RIKEN Centre for Computational Science* JPN *7,630,848*

Alps ***0.435*** *Swiss National Supercomputing Centre* SUI *2,121,600*

PETASCALE
<1Exaflop



LineShine Built on ***LX2*** – 1.55 GHz ***ARM 9*** CPU – rather than GPU graphics processors usually used for AI – 304 cores per die, in cluster of 20,480 nodes

SENSE OF SCALE

- **Exaflop:** Unit of measurement for performance of processor power
  - **Exa:** Quintillion or ***1,000,000,000,000,000,000***
  - **Flop:** ***Floating Point Operations Per Second***
- If one person was to make same number of calculations at rate of one every second, it would take ***675 billion years*** to complete task

Source: Top500, Al Jazeera

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