India set to triple speed of its fastest supercomputers

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India's '**AIRAWAT'** has recently been ranked at **No. 75** in the world by the **61st edition** of **Top 500 Global Supercomputing List** at the International Supercomputing Conference (**ISC 2023**).

[ref-india tech news]

About the AIRAWAT:

- **AIRAWAT** is India's **largest** and **fastest** AI supercomputing system, with a **speed** of **13,170 teraflops** (Rpeak).
    - **Flops** (floating point operations per second) are an indicator of computers processing speed.
- **AIRAWAT** works on operating system- **Ubuntu** 20.04.2 LTS.
- The **AIRAWAT** supercomputer runs on **AMD EPYC 7742 64C 2.25GHz** processor.

About the Top 500 Global Supercomputing List:

- The Top500 report lists the **500 fastest computer systems** being used today and **installed** across the world.
- **Parameters for ranking**: The best **Linpack** benchmark performance achieved is used to rank the computers.
    - The **Linpack Benchmark** is a measure of a computer's **floating-point** rate of **execution**.
    - The **Linpack Benchmark** is determined by **running** a computer **program** that solves a dense system of **linear equations**.

3 other Indian supercomputers in the Top 500 list:

- **PARAM Siddhi-AI supercomputer** used by Center for Development of Advanced Computing (C-DAC).
- **Pratyush supercomputer** used by Indian Institute of Tropical Meteorology.

- **Mihir supercomputer** used by the National Centre for Medium Range Weather Forecasting.

Super-computing in India:

- India aims to install **18-petaflop system** to scale up India's super-computing power.
    - A **petaflop** refers to a **1,000 trillion flops**.

High-performance computing system in the world:

- The **fastest** high-performance computing system in the world is currently the **Frontier-Cray system** at **United States**.
    - This has a peak speed of **1 exa-flop** (or about 1,000 petaflops).
- The top 10 other systems are based on **speed** of about **400 petaflops** to **60 petaflops**.