



PARAM RUDRA SUPERCOMPUTERS : SCIENCE & TECHNOLOGY

NEWS : PM Modi launches 3 PARAM Rudra supercomputers, says tech upgradation should empower poor

WHAT'S IN THE NEWS ?

The High-Performance Computing system is tailored for weather and climate research, and the project represents an investment of ₹850 crore

PARAM Rudra Supercomputers:

- **Deployment:** Installed in Pune, Delhi, and Kolkata under the National Supercomputing Mission (NSM).
- **Research Areas:** Aid research in physics, cosmology, and earth sciences.
- **PARAM Series:** Part of the PARAM supercomputers developed under NSM.

National Supercomputing Mission (NSM):

- **Launch:** A government initiative to enhance supercomputing capabilities.
- **Objective:** Promote indigenous hardware and software for supercomputers.
- **Collaboration:** Led by MeitY and DST, implemented by C-DAC and IISc.
- **Impact:** Supports Digital India, Make in India, AI, and quantum computing.

Supercomputers:

- **Definition:** Perform at the highest operational rates, measured in FLOPS.
- **FLOPS:** Measured in teraflops (trillions) or petaflops (quadrillions).

Applications of Supercomputers:

- **Weather Forecasting:** Climate change monitoring.
- **Space Exploration:** Simulations for space missions.
- **Artificial Intelligence (AI):** Processing datasets for machine learning.
- **Healthcare & Genomics:** Drug discovery, genome sequencing.



SUPER PERFORMER

➤ **New supercomputer at SNBNCBS | 830** teraFLOPS

➤ **Supercomputer at IISc, Bengaluru | 3.3** petaFLOPS

➤ **Argonne National Laboratory, US | 585** petaFLOPS

➤ **Oakridge National Laboratory, US | 1,194** petaFLOPS

(1 petaFLOP = **1,000** teraFLOP)



The PARAM Rudra Supercomputer



India's Supercomputers:

- **PARAM Rudra:** Installed in Pune, Delhi, and Kolkata under NSM.
- **Pratyush & Mihir:** Used for weather forecasting, located in Pune and Noida.
- **PARAM Yuva-II:** Developed by C-DAC, one of India's fastest.

Global Supercomputers:

- **Frontier (USA):** Fastest in 2023, exceeding 1 exaFLOP.
- **Fugaku (Japan):** Used in drug discovery and climate modeling.

Source : <https://www.thehindu.com/news/national/pm-modi-launches-3-param-rudra-supercomputers-says-tech-upgradation-should-empower-the-poor/article68687177.ece>