

GOVERNMENT OF INDIA
MINISTRY OF ELECTRONICS AND INFORMATION TECHNOLOGY
RAJYA SABHA
UNSTARRED QUESTION No. 551
TO BE ANSWERED ON 07.02.2025

STATUS OF DEPLOYMENT OF SUPER COMPUTERS

551. DR. ANIL SUKHDEORAO BONDE:
DR. PARMAR JASHVANTSINH SALAMSINH:
SHRI DEEPAK PRAKASH:

Will the Minister of Electronics and Information Technology be pleased to state:

- (a) the total number of supercomputers deployed across various academic institutions, research organizations, and Research and Development (R&D) laboratories;
- (b) the individual compute capacity of the supercomputers; and
- (c) the number of researchers and scholars facilitated by the use of such supercomputers?

ANSWER

MINISTER OF STATE FOR ELECTRONICS AND INFORMATION TECHNOLOGY
(SHRI JITIN PRASADA)

(a) to (c): The National Supercomputing Mission (NSM) was initiated in April 2015 by the Government of India with a budget outlay of Rs.4,500 crore for seven years. Its vision is to achieve self-reliance and global leadership in supercomputing by giving access of state-of-the-art supercomputing facilities to researchers, addressing grand challenges, optimizing investments, and enhancing global competitiveness in key areas of supercomputing technologies.

The NSM is being jointly implemented by the Ministry of Electronics and Information Technology (MeitY) and the Department of Science and Technology (DST). MeitY and DST are implementing this initiative through Centre for Development of Advanced Computing (CDAC), Pune and Indian Institute of Science (IISc), Bengaluru. The mission is currently extended till December, 2025.

Under the National Supercomputing Mission (NSM), an ecosystem has been established with the focused goal of achieving self-reliance in supercomputing, encompassing the design, development, and manufacturing of supercomputers, as well as the creation of a complete system software stack and associated applications.

India has now the capability of designing, developing and manufacturing supercomputing technologies indigenously, which will reduce dependency on imports of supercomputing technologies from other countries. This approach is in line with the Hon'ble Prime Minister's vision of "India's mantra is Atmanirbharta (self-reliance) through research, Science for Self-Reliance."

Hon'ble Prime Minister Shri Narendra Modi on 26th September, 2024 dedicated three PARAM Rudra supercomputers to the young researchers, scientists and engineers of nation facilitating advanced studies in physics, earth sciences, and cosmology. These supercomputers have been deployed in Pune, Delhi and Kolkata to facilitate pioneering scientific research. Giant Metre Radio Telescope (GMRT- 1Petaflop) in Pune will leverage the supercomputer to explore astronomical phenomena. Inter-University Accelerator Centre (IUAC- 3 Petaflops) in Delhi will enhance research in fields like material science and atomic physics. S.N. Bose Centre for Basic Sciences (S.N. Bose- 838 Teraflops) in Kolkata will drive advanced research in areas such as physics, cosmology, and earth sciences. It is worth

reiterating that all these systems have been designed, developed and manufactured entirely within the country.

PARAM Rudra supercomputers are built using indigenously designed and manufactured High-Performance Computing servers, known as "Rudra", along with an indigenously developed system software stack. "Rudra" Server is the first of its kind in India which is at par with globally available other HPC class Servers. These servers are being manufactured in India by local manufacturers boosting local electronics industries.

With the commissioning of three PARAM Rudra supercomputers, as of 29th January 2025, a total of 34 supercomputers(**Annexure – I**) with a combined compute capacity of 35 Petaflops, have been deployed across various academic institutions, research organizations, and R&D labs, including prominent institutions like IISc, IITs, C-DAC, and other institutions from Tier-II and Tier III cities of the country under NSM. These supercomputers facilitate over 10,000 researchers, including more than 1,700 PhD scholars from over 200 academic institutions and R&D labs across the country. NSM has created opportunities for researchers from Tier II and Tier III cities to conduct research by providing access to state-of-the-art supercomputing facilities. These researchers have completed over 1 crore compute jobs and published more than 1,500 papers in leading national and international journals. Additionally, more than 22,000 individuals have been trained in HPC and AI skills. Start-ups and MSMEs are leveraging these supercomputing resources to advance their HPC-driven projects.

Details of Supercomputers installed under NSM with compute capacity

Sl. No.	State/UT	Name of the institution Installed at	Name of Supercomputer	Compute Capacity	Year of Commission
1.	Maharashtra	C-DAC, Pune, National AI Facility	PARAM Siddhi	6.5PF/210PF (AI)	2020
2.	Karnataka	IISc, Bangalore	PARAM Pravega	3.3PF	2022
3.	Maharashtra	IIT Bombay	PARAM Rudra	3 PF	2025
4.	Delhi	Inter-University Accelerator Centre(IUAC), Delhi	PARAM Rudra	3 PF	2024
5.	Karnataka	Jawaharlal Nehru Centre for Advanced Scientific Research(JNCASR), Bangalore	PARAM Yukti	1.8PF	2020
6.	Maharashtra	IISER, Pune	PARAM Brahma	1.7PF	2020
7.	West Bengal	IIT, Kharagpur	PARAM Shakti	1.66PF	2020
8.	Uttar Pradesh	IIT, Kanpur	PARAM Sanganak	1.66PF	2020
9.	Uttarakhand	IIT, Roorkee	PARAM Ganga	1.66PF	2022
10.	Delhi	NIC, Delhi	PARAM System	(50 AI PF/ 1.3 PF)	2024
11.	Maharashtra	Giant Metrewave Radio Telescope (GMRT) -National Centre for Radio Astrophysics, (NCRA), Pune	PARAM Rudra	1.0 PF	2024
12.	Uttar Pradesh	IIT(BHU), Varanasi	PARAM Shivay	838TF	2019
13.	Telangana	IIT, Hyderabad	PARAM Seva	838TF	2021
14.	Punjab	National Agri-Food Biotechnology Institute, Mohali(NABI), Mohali	PARAM Smriti	838TF	2021
15.	Karnataka	C-DAC, Bangalore, National MSME Facility	PARAM Utkarsh	838TF	2021
16.	Gujarat	IIT, Gandhinagar	PARAM Ananta	838TF	2022
17.	Tamil Nadu	NIT, Trichy	PARAM Porul	838TF	2022
18.	Assam	IIT, Guwahati	PARAM Kamrupa	838TF	2022
19.	Himachal Pradesh	IIT, Mandi	PARAM Himalaya	838TF	2022
20.	West Bengal	S. N. Bose National Centre for Basic Sciences, Kolkata	PARAM Rudra	838 TF	2024
21.	Maharashtra	C-DAC, Pune	Bioinformatics R&D Facility	230 TF	2021
22.	Delhi	C-DAC, Delhi	PARAM Rudra	200 TF	2024
23.	Maharashtra	C-DAC, Pune	SANGAM Testbed	150 TF	2017

24.	Maharashtra	C-DAC, Pune	PARAM Shrestha	100 TF	2018
25.	Maharashtra	C-DAC, Pune	PARAM Embrio	100 TF	2020
26.	Maharashtra	C-DAC, Pune	PARAM Neel	100 TF	2020
27.	Tamil Nadu	Society for Electronic Transactions and Security, (SETS), Chennai	PARAM Spoorthi	100 TF	2020
28.	Karnataka	C-DAC, Bangalore	System Software lab	82TF	2020
29.	Maharashtra	C-DAC, Pune	PARAM Vidya	52.3 TF	2022
30.	West Bengal	IIT, Kharagpur	PARAM Vidya	52.3 TF	2022
31.	Kerala	IIT, Palakkad	PARAM Vidya	52.3 TF	2022
32.	Tamil Nadu	IIT, Chennai	PARAM Vidya	52.3 TF	2022
33.	Goa	IIT, Goa	PARAM Vidya	52.3 TF	2022
34.	Maharashtra	C-DAC, Pune	PARAM Sampooran	27 TF	2020
	Total			35 PF	
