Ministry of Electronics & IT

37 supercomputers with a total computing power of 40 Petaflops deployed under the National Supercomputing Mission (NSM)

“PARAM Rudra” series of supercomputers available to the young researchers, scientists and engineers for facilitating advanced studies

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The vision of Hon’ble Prime Minister is to achieve self-reliance in supercomputing. This is ensured by giving access to state-of-the-art supercomputing facilities to researchers (academia and startups) as well as ensuring the manufacturing of critical sub-components in India.

The National Supercomputing Mission (NSM) was launched in April 2015 with an outlay of ₹4,500 crore.

It is jointly implemented by the Ministry of Electronics and Information Technology (MeitY) and the Department of Science and Technology (DST) through the Centre for Development of Advanced Computing (C-DAC), Pune and the Indian Institute of Science (IISc), Bengaluru.

Deployment and Utilization of Supercomputers

So far, 37 supercomputers with a total computing power of 40 Petaflops have been deployed under the NSM. In the last five years alone, 34 supercomputers have been deployed. State and Year-wise list of supercomputers deployed are attached at Annexure – I.

In addition, deployment of 6 new supercomputing systems is in progress with the total outlay of Rs. 680 Cr.

These systems are set up in leading institutions like IISc, IITs, C-DAC, R&D Labs and also in several Tier-II and Tier-III cities across the country.

PARAM Rudra

“PARAM Rudra” series of supercomputers are built using indigenously designed and manufactured High-Performance Computing “Rudra” servers, along with an indigenously developed system software stack.

These supercomputers are available to the young researchers, scientists and engineers for facilitating advanced studies in physics, earth sciences and cosmology.

The systems are being used efficiently, with most running at over 81% capacity and few exceeding 95%. These supercomputers have supported over 13,000 researchers, including more than 1,700 PhD scholars from over 260 academic and research institutions.

More than one crore compute jobs have been completed, and as a result over 1,500 research papers have been published in reputed journals.

Startups and MSMEs are also using these systems to boost their HPC-based projects.

These supercomputers are driving advanced research in drug discovery, disaster management, energy security, climate modelling, astronomy, computational chemistry, fluid dynamics, materials research, Aerospace Engineering and many other research areas.

Indigenous Development and Technological Achievements

Under the NSM, a complete ecosystem has been established with the focused goal of achieving self-reliance in supercomputing. It includes, inter alia, the design, development, and manufacturing of critical supercomputing sub-components, as follows:

1. The Rudra Server Board, a key supercomputing component, has been indigenously designed and developed by C-DAC. The technology of the Rudra server has been transferred to three Indian Electronics Manufacturing Services (EMS) partners for manufacturing and such servers are already being manufactured in India.

2. High-speed inter communication network between computer nodes has been developed and tested with speeds of 40 Gbps and 100 Gbps to enhance data transfer and communication between computing nodes, strengthening India’s supercomputing capabilities.

3. Further, cooling technology has been indigenously developed, demonstrated and is in the deployment stage.

4. Complete HPC system software stack is also developed and has been integrated with the supercomputing systems.

5. PARAM Shavak, a supercomputing-in-a-box has been designed, developed and manufactured in the country to cater to the HPC and AI compute need of the students, researchers from the engineering colleges and universities.

6. HPC applications of National Importance have been developed and deployed in various domains i.e. NSM Platform for Genomics and Drug Discovery, Flood Forecasting and Disaster Management, Urban Environment and Weather Modelling, Seismic Data Processing System for Oil & Gas, Material science along with the end users i.e. India Meteorological Department (IMD), Oil and Natural Gas Corporation (ONGC), Central Water Commission (CWC), Central Pollution Control Board (CPCB), Ministry of Ayush.

7. To further strengthening the indigenous capabilities, design and development of HPC processors, accelerators and storage has been initiated.

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Annexure-I

Details of Supercomputers deployed under NSM with compute capacity

Sl. No.	State/UT	Institution	Supercomputer	Compute Capacity	Year
1.	Maharashtra	C-DAC, Pune	SANGAM Testbed	150 TF	2017
2.	Maharashtra	C-DAC, Pune	PARAM Shrestha	100 TF	2018
3.	Uttar Pradesh	IIT(BHU), Varanasi	PARAM Shivay	838 TF	2019
4.	Maharashtra	C-DAC Pune National AI Facility	PARAM Siddhi	6.5 PF / 210 AI PF	2020
5.	Karnataka	JNCASR, Bangalore	PARAM Yukti	1.8 PF	2020
6.	Maharashtra	IISER Pune	PARAM Brahma	1.7 PF	2020
7.	West Bengal	IIT Kharagpur	PARAM Shakti	1.66 PF	2020
8.	Uttar Pradesh	IIT Kanpur	PARAM Sanganak	1.66 PF	2020
9.	Maharashtra	C-DAC Pune	PARAM Embrio	100 TF	2020
10.	Maharashtra	C-DAC Pune	PARAM Neel	100 TF	2020
11.	Tamil Nadu	SETS Chennai	PARAM Spoorthi	100 TF	2020
12.	Karnataka	C-DAC Bangalore	System Software Lab	82 TF	2020
13.	Maharashtra	C-DAC Pune	PARAM Sampooran	27 TF	2020
14.	Telangana	IIT Hyderabad	PARAM Seva	838 TF	2021
15.	Punjab	NABI Mohali	PARAM Smriti	838 TF	2021

16.	Karnataka	C-DAC Bangalore MSME Facility	PARAM Utkarsh	838 TF	2021
17.	Maharashtra	C-DAC Pune	Bioinformatics R&D Facility	230 TF	2021
18.	Karnataka	IISc Bangalore	PARAM Pravega	3.3 PF	2022
19.	Uttarakhand	IIT Roorkee	PARAM Ganga	1.66 PF	2022
20.	Gujarat	IIT Gandhinagar	PARAM Ananta	838 TF	2022
21.	Tamil Nadu	NIT Trichy	PARAM Porul	838 TF	2022
22.	Assam	IIT Guwahati	PARAM Kamrupa	838 TF	2022
23.	Himachal Pradesh	IIT Mandi	PARAM Himalaya	838 TF	2022
24.	Maharashtra	C-DAC Pune	PARAM Vidya	52.3 TF	2022
25.	West Bengal	IIT Kharagpur	PARAM Vidya	52.3 TF	2022
26.	Kerala	IIT Palakkad	PARAM Vidya	52.3 TF	2022
27.	Tamil Nadu	IIT Madras	PARAM Vidya	52.3 TF	2022
28.	Goa	IIT Goa	PARAM Vidya	52.3 TF	2022
29.	Maharashtra	C-DAC Pune	PARAM Rudra Pilot facility	1 PF	2023
30.	Delhi	IUAC Delhi	PARAM Rudra	3 PF	2024
31.	Delhi	NIC Delhi	PARAM System	50 AI PF/1.3 PF	2024

32.	Maharashtra	GMRT–NCRA Pune	PARAM Rudra	1 PF	2024
33.	West Bengal	S.N. Bose Centre Kolkata	PARAM Rudra	833 TF	2024
34.	Delhi	C-DAC Delhi	PARAM Rudra	200 TF	2024
35.	Maharashtra	IIT Bombay	PARAM Rudra	3 PF	2025
36.	Tamil Nadu	IIT Madras	PARAM Rudra	3 PF	2025
37.	Bihar	IIT Patna	PARAM Rudra	833 TF	2025
Total				**40 PF**	

This information was submitted by Union Minister of State for Electronics and Information Technology Shri Jitin Prasada in Lok Sabha on 10.12.2025.

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