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LineShine: The World's Fastest Supercomputer Is Now in China

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In this article: The November 2026 TOP500 list, facts on LineShine, what FLOPS and Rmax/Rpeak mean, history of the top spot, where India stands, practice questions, FAQ



Original symbolic illustration: pcsmantra.com

Why in the news

The November 2026 TOP500 list - the official ranking of the world's 500 most powerful supercomputers - has been released, and China's **LineShine** tops it. Its claimed performance had been reported in June; the official ranking now confirms it. LineShine's measured speed (Rmax) is **2,198.40 PFlop/s**, about 2.2 exaflops, clearly ahead of the previous number one, the United States' El Capitan (1,809.00 PFlop/s).

LineShine: key facts (TOP500, November 2026)

Fact	Detail
Rank	1
Rmax (measured on LINPACK)	2,198.40 PFlop/s
Rpeak (theoretical maximum)	2,735.82 PFlop/s
Cores	13,789,440
Processor	LingKun LX2 304C (1.55 GHz)
Interconnect	LingQi

Fact	Detail
Operating system	Kylin OS
Operator	Shenzhen Cloud Computing Center Co., Ltd., National Supercomputing Centre in Shenzhen (NSCS)
Power	42,220 kW

Top 5 (November 2026)

1. **LineShine** (China) - 2,198.40 PFlop/s
2. **El Capitan** (US, HPE Cray, AMD) - 1,809.00 PFlop/s
3. **Frontier** (US, HPE Cray, AMD) - 1,353.00 PFlop/s
4. **Aurora** (US, Intel) - 1,012.00 PFlop/s
5. **JUPITER Booster** (Germany, EuroHPC) - 1,000.00 PFlop/s

> **Related reading:** The Indian Statistical Institute Bill: Autonomy and Accountability

Key concepts

- **TOP500:** A ranking published since 1993, twice a year (in June and November, at international supercomputing conferences), based on the **LINPACK benchmark**.
- **FLOPS:** Floating-point operations per second - the standard measure of supercomputer speed. Order: teraflops (10^12) < petaflops (10^15) < **exaflops (10^18)**.
- **Rmax versus Rpeak:** Rmax is the speed actually measured on the LINPACK test; Rpeak is the theoretical maximum derived from processor clock rates - the ranking uses Rmax.

A brief history of the top spot

- **Tianhe-1A** (China): China's first number one, November 2010.
- **Tianhe-2** (China): number one through 2013-2015.
- **Sunway TaihuLight** (China): number one in 2016-2017 (built on indigenous processors).
- **Summit** (US): 2018-2019; **Fugaku** (Japan): 2020-2021.
- **Frontier** (US): the first official exascale number one, June 2022.
- **El Capitan** (US): number one from November 2024.
- **LineShine** (China): number one from November 2026 - built on indigenous LingKun chips, a sign of China's self-reliance strategy amid technology restrictions.

Where India stands

- India's highest system on the November 2026 list is **Yotta's Shakti Cloud** (DELL PowerEdge, NVIDIA H100) at **rank 35**, with an Rmax of 84.31 PFlop/s.
- **National Supercomputing Mission (NSM, 2015):** A joint mission of the Ministry of Electronics and IT and the Department of Science and Technology (about Rs 4,500 crore); C-DAC develops the **PARAM series** of systems.
- Notable Indian systems: **PARAM Siddhi-AI**, **AIRAWAT** (AI research, C-DAC Pune), among others.

Way forward (for India)

- Focus on indigenous processors and exascale capability in the next phase of the NSM.
- Using supercomputing for climate modelling, drug discovery, AI and national security - computing capacity is itself a strategic asset.

Prelims Practice Questions

Question 1

With reference to the November 2026 TOP500 list, consider the following statements:

Statement 1: China's LineShine ranks first on this list
Statement 2: The TOP500 list ranks systems by Rpeak on the LINPACK benchmark
Statement 3: LineShine is installed at the National Supercomputing Centre in Shenzhen

Which of the statements given above are correct?

(a) 1 and 2 only

(b) 1 and 3 only

(c) 2 and 3 only

(d) 1, 2 and 3

▼ **Answer and Explanation**

Correct answer: (b)

Statement 1: Correct - LineShine is number one, with an Rmax of 2,198.40 PFlop/s
Statement 2: Incorrect - ranking is by Rmax (the measured LINPACK speed), not Rpeak
Statement 3: Correct - NSCS Shenzhen, operated by Shenzhen Cloud Computing Center Co., Ltd.

Question 2

With reference to supercomputing, consider the following statements:

Statement 1: One exaflop means 10^18 floating-point operations per second
Statement 2: India's highest system on the November 2026 TOP500 list is Yotta's Shakti Cloud
Statement 3: The National Supercomputing Mission is a mission of the Department of Science and Technology alone

Which of the statements given above are correct?

(a) 1 and 2 only

(b) 2 and 3 only

(c) 1 and 3 only

(d) 1, 2 and 3

▼ **Answer and Explanation**

Correct answer: (a)

Statement 1: Correct - one exaflop equals 10^18 FLOPS
Statement 2: Correct - Yotta's Shakti Cloud is at rank 35 (84.31 PFlop/s)
Statement 3: Incorrect - the NSM is a joint mission of the Ministry of Electronics and IT and the Department of Science and Technology

Frequently Asked Questions (FAQ)

What is the TOP500 list?

A twice-yearly (June/November) ranking of the world's 500 most powerful supercomputers, published since 1993; systems are ranked by Rmax on the LINPACK benchmark.

Which country does LineShine belong to, and how fast is it?

China (NSCS Shenzhen); Rmax of 2,198.40 PFlop/s, about 2.2 exaflops.

Which is India's fastest system?

On the November 2026 list, Yotta's Shakti Cloud - rank 35 at 84.31 PFlop/s; NSM systems such as PARAM Siddhi-AI and AIRAWAT are also operational.

Sources

- www.top500.org
- www.livescience.com

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