

MODERN INFRASTRUCTURE FOR COLLABORATIVE DATA SCIENCE



The Jefferson Lab Data Center (JLDC) will be a hub where researchers collaborate to advance scientific discovery. As the future home of the High Performance Data Facility (HPDF), JLDC will provide seamless access to scientific data nationwide, enabling faster and more impactful innovation. Designed for efficiency and partnership, JLDC supports progress in science for our nation — driving advancements in healthcare, national security, energy and beyond.

WHY IT MATTERS

PURPOSE-BUILT FOR SCIENCE

Designed specifically for scientific workloads and data stewardship that advance DOE's science and technology mission.

RIGHT-SIZED INFRASTRUCTURE

At approximately 30,000 square feet, JLDC is a focused, mission-driven facility thoughtfully integrated within the existing campus footprint, supporting advanced data and research for the U.S. Department of Energy.

ADVANCING NATIONAL PRIORITIES

Directly supports DOE's Genesis Mission that advances AI for science and energy, while aligning with the broader vision for a connected, collaborative national research ecosystem.

STRATEGIC INVESTMENT IN SCIENCE

Through a \$43.3 million investment from the Commonwealth of Virginia, supplemented by \$6 million in seed funding and additional federal and local support, critical infrastructure will enable future scientific discovery.

JLDC IS THE BUILDING AND FUTURE HOME OF HPDF

JLDC is the physical infrastructure that will support AI computing and advanced data analysis at Jefferson Lab. It is not the computing system itself; the full capability will be realized when HPDF systems are installed following the completion of construction.

ENABLING HPDF

JLDC will house and enable HPDF – a first-of-its-kind scientific user facility supporting:

- **Advanced data analysis**
- **High-speed networking**
- **Scalable data managing & indexing**
- **AI-enabled discovery across DOE Office of Science programs**
- **Research & entrepreneurship**

MISSION IMPACT

TRANSFORMING SCIENTIFIC DATA

HPDF will reshape how data is accessed, analyzed and shared across the DOE Office of Science, setting a new standard for how research is managed now and into the future.

ADVANCING THE GENESIS MISSION

JLDC will enable the infrastructure needed to scale AI for science and energy, accelerating discovery and innovation.

STRENGTHENING JEFFERSON LAB'S FUTURE

Building JLDC is part of a broader campus modernization, positioning Jefferson Lab at the center of data-intensive discovery and national collaboration.

JEFFERSON LAB DATA CENTER + HIGH PERFORMANCE DATA FACILITY		COMMERCIAL DATA CENTER
Purpose	Advance scientific discovery and innovation for the nation	Deliver cloud services, streaming, e-commerce and consumer applications
Who Uses It?	Researchers at DOE national labs, universities and scientific institutions, including NASA, National Institutes of Health and the U.S. National Science Foundation	Millions of businesses and consumers worldwide
What It Supports	Scientific computing, data analysis and research collaboration	Cloud storage, web services, AI products, business applications
Facility Size	30,000 sq. ft., with less than a third reserved for servers	Often 500,000–1,000,000+ sq. ft. across multiple buildings
Campus Scale	Single research facility	Large multi-building campuses
Power Demand	Designed for scientific workloads, with capacity up to 5 megawatts, equivalent to ~13% of energy usage for the federal campus	Built with capacities from 100 to 1,000 megawatts each serving commercial customers
Data Storage	Coordinates access and indexing to scientific data; the data remains at other DOE facilities	Massive amounts of commercial customer data stored locally
Mission	National scientific infrastructure, research and innovation	Commercial business operations
Funding	Commonwealth of Virginia + U.S. Department of Energy	Private investment
Community Benefit	Scientific research, innovation, education, jobs and national competitiveness (~100 new jobs)	Commercial digital services

The Jefferson Lab Data Center is a purpose-built federal research facility that supports scientific discovery—not commercial internet services.

For more information on the Jefferson Lab Data Center, visit <https://hpdf.science/JLDC-HPDF>

THOMAS JEFFERSON NATIONAL ACCELERATOR FACILITY

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Jefferson Lab is managed by SURATech, LLC for the Department of Energy Office of Science

