



CENIC connects California to the world – advancing education and research statewide by providing a world-class network essential for innovation, collaboration, and economic growth.

22

Campuses and the Office of the Chancellor

525K

Students, Faculty & Staff

15

Campuses connected at 100+ Gbps

The California State Universities and CENIC

Supporting the California State Universities in changing the trajectory of students' lives and creating California's workforce.

CENIC is a nonprofit organization created in 1996 by California's research and education community to provide themselves with the most advanced networking and support designed to meet their unique needs. We connect California's research and education institutions to one another, and to resources and colleagues around the globe, with an estimated 20 million Californians using our services.

CENIC is governed by our Charter Associates, which include the California State University system, the University of California system, California's Community Colleges, the California K–12 system, California Public Libraries, and independent universities Caltech, Stanford University, the University of Southern California, and the Naval Postgraduate School. Other members include scientific and cultural institutions, hospitals and specialized medical institutions, space and environmental research organizations, and Tribal nations.

The California State Universities in Action with CENIC

In the mid-1990s, CENIC began as a project of the state's research and education community, with the California State Universities among its founders. That first concept—an advanced fiber-based network to serve the state's research and education communities—has since grown into a profound partnership enabling California to create a workforce that can better the lives of hundreds of thousands of students each year and society itself in the coming decades.

Thanks to that partnership, all 22 CSU campuses and off-campus sites enjoy future-facing networking and services via CENIC's California Research and Education Network (CalREN), specially designed by and for the state's research and education community. Fifteen CSU campuses have at least 100 Gbps connectivity to CalREN and, through that, to all CSU campuses, CENIC member institutions, and resources and colleagues around the world.

Connectivity to a single, shared statewide infrastructure also enables the CSU to fulfill a central role in higher education. Currently, 51% of CSU graduates begin their academic careers at a community college, many of whom then obtain graduate degrees at a UC campus or independent universities.

The interconnectivity provided via CalREN has also enabled the CSU's recent Technology Infrastructure for Data Exploration (TIDE) project. A partnership between San Diego State University (SDSU) and the San Diego Supercomputer Center (SDSC), TIDE extends the CENIC AI Resource (CENIC AIR), the California portion of the National Research Platform (NRP), beyond SDSU to three additional CSU campuses: CSU San Bernardino, Cal Poly Humboldt, and CSU Stanislaus. Participating institutions can also “burst” to more extensive national resources through integration into the 1,200 GPU nodes and 21,000 CPU cores of the NRP.

Did you know?

Network Solutions Designed for Your Needs

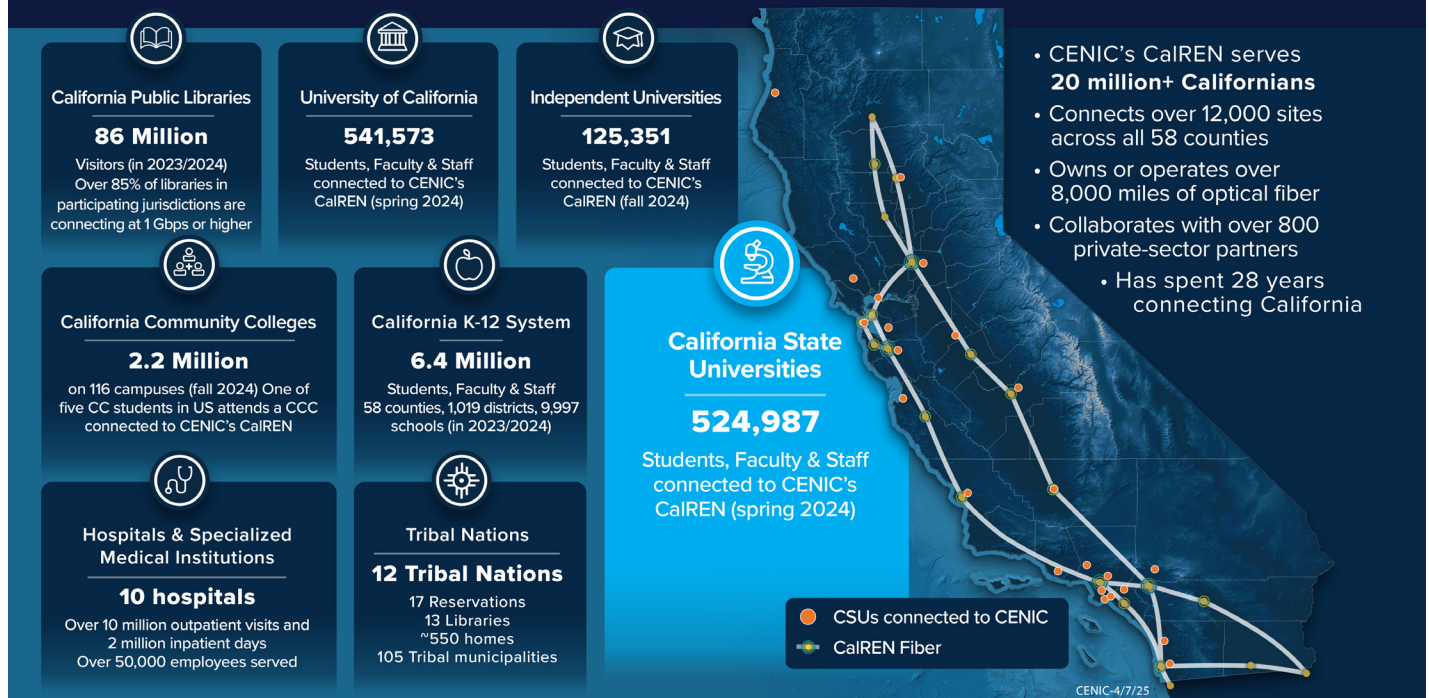
CENIC's Engineering team thoroughly understands the requirements of campus networking and works together with the California State University system to craft the most cost- and time-efficient solutions (networking and services) that support your mission now and in the future.

CENIC AIR participants can also easily access commercial cloud offerings as well as NSF HPC centers, should they need to scale beyond NRP resources and have the allocations, funds, or cloud credits to use these services. Thus, via TIDE, CENIC AIR, and NRP—interconnected by CalREN—students and faculty at a growing number of participating CSU campuses are shaping the transformations promised by Artificial Intelligence and Machine Learning.

To forestall network-based volumetric cyberattacks and other threats, CENIC Charter Associates can access Radware's on-demand, cloud-based DDoS Mitigation Service (DMS). Thanks to our partnership with Internet2, CENIC obtains for its members an extremely attractive “bulk” pricing for this service that would not otherwise be available, along with high-capacity direct connections through Internet2 to Radware.

Thus, many California State Universities contract with CENIC to obtain DDoS attack detection and mitigation services that are far more responsive and cost-effective than any currently available from commercial providers.

California State Universities Connected to CalREN



CENIC partners with national and international research and educational, governmental, and commercial networks to expand access, working to support broad public access to the educational, research, and cultural assets that position California for a prosperous future.

Positioning California for the Future through Digital Education

Many pressing problems confronting humanity in the coming decades will take cooperation on the part of all of society to solve, and the California State University is an essential part of these solutions. The CSU's interests are intimately tied to digital education, particularly since this segment plays such a central role in the state's higher education system.

One recent example of network-enabled instruction is SDSU's computing cluster for instructional use, the Visionary Education Research Network Environment (VERNE), which offers advanced graphics processing and storage made available via JupyterHub, an easy-to-use web-based environment for accessing these resources.

Part of and operating over CENIC AIR, VERNE usage has steadily increased each semester since launching in

Did you know?

Around-the-Clock Network Support Tailored for You

The California State University also enjoys support from CENIC's 24/7 Network Operations Center, staffed by highly trained network engineers with over 25 years of experience working with our segments to create bespoke solutions that address and scale to their unique needs.

Did you know?

CENIC Peers Directly with Major Cloud Providers

CENIC offers direct connections to AWS Direct Connect and Oracle FastConnect at CalREN's Los Angeles and San Jose backbone node sites. These direct connections offer increased resiliency and performance for access to cloud resources across all of California. In addition, there is also a 10 Gbps connection to AWS made possible by CENIC's interconnection to Internet2 at San Jose.

Spring 2023, beginning with two courses, then six in Fall 2023, thirteen in Spring 2024, nineteen in Fall 2024, and fifteen in Spring 2025.

"SDSU's institutional investment in VERNE is one element of its AI and machine learning strategy," said James Frazee, SDSU interim Vice President for Information Technology and Chief Information Officer.

"VERNE provides faculty and students with access to these resources to support teaching and student-based research, equipping students for career success."