



NYSErNet's dedicated research and education (R&E) network supports the development and testing of emerging network technologies and the deployment of leading edge network-based applications and network-enabled collaborations. Designed and deployed for the sole purpose of enhancing and enabling the activities of New York's research and education communities, the R&E network enables research that employs network-intensive applications like large-scale data transfers, distributed computing, distance learning, tele-immersion, remote research, remote equipment acquisition, virtual laboratories and digital libraries. Educational activities and opportunities such as videoconferencing, multicasting, remote visualization, interactive virtual field trips and interactive teaching are equally enhanced and enjoyed by the growing list of NYSErNet members.

An IP-based network built on NYSErNet's statewide DWDM transport infrastructure, the network offers redundant egress to Internet2's national R&E network and, through MAN LAN, peering with national and international R&E networks including CA*net 4 (Canada's national R&E network), ESNnet (the U.S. Department of Energy's research network), TWAREN (Taiwan's national R&E network) and ORION (Ontario, Canada's Research and Innovation Optical Network).

Institutions can connect to the NYSErNet R&E network at POPs (points of presence) in Buffalo, Rochester, Binghamton, Syracuse, Albany and New York City. These POPs are interconnected via multiple Gigabit paths, forming a virtual mesh that adds redundancy and enhances performance, reducing the number of hops between any connected institution and the nearest egress point. Further, this distributed POP architecture reduces the cost of connecting, since POPs are strategically located in population centers where potential connectors are concentrated.

Participating institutions generally connect to the network at speeds of 200 Mbps or more, primarily using metro or long-haul dark fiber or lit GigE services. But the minimum GigE-based connection that NYSErNet offers is 25 Mb, which is deemed the lowest practical connection rate that can support applications.

Institutions eligible to participate in the R&E Network include all not-for-profit and government entities, as well as for-profit research laboratories that have a research relationship with existing members. Currently, the network serves 422 universities, colleges, K-12 school districts, hospitals, museums, libraries and other research institutions.

NYSErNet is a not-for-profit corporation founded in 1985 by a consortium of visionary public and private institutions to advance science and education in the Empire State. NYSErNet collaborates with member institutions, corporate partners and other key stakeholders to develop and deploy innovative technology services designed to promote advances in research and education. NYSErNet's ever expanding suite of offerings currently includes: high-performance commercial Internet access, regional access to Internet2, optical dark fiber, optical wavelengths and business continuity services.