Frequently Asked Questions

NYSERNet's Integrated Access Service

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What are the benefits of the Integrated Access Service?

Many of New York's small and mid-size colleges and universities have expressed interest in connecting to Internet2 via NYSERNet but have been put off by the expense of maintaining two separate network connections: one to NYSERNet and one to a commercial Internet service (CIS) provider.

NYSERNet's Integrated Access Service (IAS) includes features that compliment a traditional commercial connection at an affordable price point. IAS brings the benefits of NYSERNet R&E/Internet2 participation to small and mid-size colleges and universities.

IAS is a bundled solution which enables connections to multiple networks via a single hand-off. By consolidating services over a single local loop, and expanding the services reachable via that single local loop, IAS offers:
- Financial justification for connecting to NYSERNet's R&E Network.
- Access to services beyond the geographic area of an institution.
- High bandwidth capacity to reach cloud service providers.

What institutions are eligible to participate?

Any institution that is eligible to participate in the Internet2 Community Anchor Program (CAP) is eligible to participate in this service. NYSERNet membership staff will work with interested institutions to determine their eligibility.

What is included with the service?

The service includes 1 Gb access to NYSERNet's R&E network and Internet2, access to NYSERNet's Content Peering Service and the ability to deploy VLANs across NYSERNet's infrastructure to reach third-party service providers such as CIS providers, cloud service providers, NYSERNet's on-network data center and colocation facilities in Syracuse and New York City, or any other connected institution on the NYSERNet footprint.

To ensure sufficient bandwidth for the services included with IAS, a minimum 10 GigE local loop is required. Rate-limited local loops using a 10 GigE handoff but with less than 10 Gbps of bandwidth may be acceptable depending on the total bandwidth needs of the campus.

How much does the service cost?

The service (including 1 Gb of R&E access, Content Peering Service, and up to two additional VLANs) costs $3000 per month, plus a one-time installation fee of $2,500. Additional VLANs are available for a one-time fee of $250 each. Participating institutions must also have a minimum 10 Gb local loop to the nearest NYSERNet POP. NYSERNet can help the institution identify suitable local loop providers.

What kind of local loop is required?

NYSERNet can accept any of the following types of local loop: lit 10 GigE, 10 GigE over dark fiber, or 10 GigE DWDM as an alien lambda (at a mutually agreed upon wavelength). Rate-limited 10 GigE local loops may also be acceptable. All network configurations must be reviewed and approved by NYSERNet.

Local loops can be very expensive in my region. What is NYSERNet doing to mitigate this?

NYSERNet recognizes that the cost of the local loop can be significant, limiting institutions' ability to participate in IAS. NYSERNet is expanding the geographic reach of its network to locate POPs (points of presence) closer to prospective participants, further reducing the costs of connecting since local loop prices are often based on mileage in addition to bandwidth.

Must the institution pay a NYSERNet membership fee in addition to the service fee?

No. As an IAS participant, a campus is eligible for all the attending benefits of NYSERNet membership.

What other benefits are included?

IAS participation offers institutions the opportunity to participate in our Quilt CIS Program (which offers heavily discounted pricing on select commercial Internet services), Quilt VMware Program (with discounts on VMware software, support, training, and professional services), and Juniper Networks Member Advantage Program (which offers a significant discount off the list price of Juniper hardware.)

Must the institution pay an Internet2 membership fee to connect to Internet2 via this new service?

This is not necessary. NYSERNet pays an annual CAP fee to Internet2 that is an offset to individual membership fees that would otherwise be required. The institution may, if it chooses, become an Internet2 member by paying the membership fee corresponding with the institution's level. This entitles the institution to additional benefits from Internet2, which may be appealing. Regardless, if the institution is CAP-eligible, then it is also eligible for IAS, even if the institution chooses to become an Internet2 member.

Can I participate in the service and not in the R&E component?

The purpose of the service is to promote and enable broader participation in the R&E network. Thus, only institutions interested in participating in the R&E component of the service are eligible.

What term lengths are available?

The service is available for three or five-year service terms. Institutions that are mid-term in an existing NYSERNet R&E contract are eligible to migrate to the new service without termination charge.

Where is the service available?

The service is currently available from all NYSERNet network POPs, which serve the following geographic areas: Buffalo, Rochester, Syracuse, Albany, New York City, Binghamton, and Potsdam/North Country. NYSERNet has undertaken a project to expand the geographic reach of its network, which means the service may soon be available in Long Island, Utica, and the Southern Tier.

Tell me more about the Content Peering Service.

For many NYSERNet member institutions, a significant portion of their inbound network traffic comes from a few large sources (e.g. Netflix, Facebook, etc.). NYSERNet reasoned that by peering with these providers and/or hosting their content servers inside our network we can improve performance and offload traffic from members commercial Internet connections, providing participating institutions a better experience at a lower cost.

What content delivery networks and peers are available via the Content Peering Service?

NYSERNet regularly evaluates potential peering options in an effort to expand the list of available content delivery networks reachable via the NYSERNet network. A sample list of peers includes:

| Akamai | Apple | Cloudflare |
| Amazon | Blizzard | Dailymotion |

Digital Ocean	Netflix	Twitter
Facebook	Salesforce	Valve
Google	OVH	Verizon DMS
Microsoft	Twitch	

What internet Service Providers are available to connect to via the service?

Institutions participating in this service may connect to any CIS provider reachable from NYSERNet's POPs in New York City (32 Avenue of the Americas) and Syracuse (100 S. Salina St.). This includes all the current Quilt CIS providers: Cogent, CenturyLink, GTT, Telia Carrier, Verizon and Zayo. NYSERNet is also exploring CIS offerings with NTTA and Hurricane Electric. Participants are not limited to connecting to Quilt providers.

What type of network equipment do I need to participate?

Participant's equipment must be able to support a 10 Gbps Ethernet connection to the local loop and appropriate internal connections to the campus network. The equipment must also support or have a license for BGP. Depending on the extent of routing received from the CIS provider, there must be enough memory to handle the number of routes received from the various external connections.

Your institution must also have an Autonomous System Number (ASN) in order to run the required border gateway protocol (BGP) to manage the IAS connection. If your institution does not already have an ASN, you may apply for one via the American Registry for Internet Numbers (www.ARIN.net).

Does NYSERNet offer a fully managed version of the service?

Yes. NYSERNet offers a managed service option, to learn more visit, https://www.nysernet.org/mrs

Must my institution continue to maintain a separate dedicated CIS connection?

While not required, NYSERNet routinely recommends that its members maintain two diversely routed CIS connections to ensure Internet service availability.

How do I know if this service is right for my institution?

The typical participant in this service is interested in participating in R&E networking but doesn't have sufficient research demand to justify a dedicated R&E connection. The institution may also face escalating costs for CIS bandwidth due to limited CIS-provider options in its geographical region.

For additional information please contact membership@nysernet.org .