

Categories have been arranged for alignment with CEN’s 2019-2024 [Strategic Plan](#).

## 1. Provide Value

- Estimated annual cost avoidance to the state across all members: \$17-25 Million
  - \$386,500 web filtering (revised from last meeting)
  - \$6.6 Million for Internet Services compared to NY, MA, RI (E-Rate data applied to all groups)
  - \$10-18 Million for DDoS protections (if contracted individually by members in emergencies)
- DDoS Mitigation / Threat Management

2019 Statistics

Mitigated Incoming Attacks	Total Volume of Mitigated (Dropped) Traffic	Volume of Largest Mitigation	Rate of Largest Mitigation	Duration of Longest Mitigation
988	33.8 TB	3.74 TB	20.03 Gbps	2 Days, 17 Hours, 54 Min.

- 207 Mitigated Attacks since Jan 1, 2020
- CT Library Fiber Consortium Project
  - Project to connect libraries through federal E-rate and matching State Library bond funds.
  - Many project sites connect underserved communities where connectivity options have remained relatively unchanged for decades. This project provides high quality service at reasonable costs to bridge gaps in the digital divide and help libraries continue to thrive as community assets.
  - Phase 5: 14 of 18 sites have library/town approval to move forward. New Haven libraries (4) are waiting for final approval.
  - The current project across all phases (1–5) will bring total fiber-connected libraries to 168 (including 47 branches), representing 70% of all 239 libraries statewide.
  - Total savings on previous 4 funding years is \$1,392,000 (FCC/USAC E-Rate dark finder IRU savings).
  - Awarded Phase 6 on January 14, 2020 targeting remaining eligible libraries.
- PEGPETIA Grant ([http://www.ct.gov/pura/cwp/view.asp?Q=490944&puraNav\\_GID=1702](http://www.ct.gov/pura/cwp/view.asp?Q=490944&puraNav_GID=1702))
  - CEN Applied for community video conferencing head end equipment. The intent is to aggregate and centralize video conferencing for all on-net members.
  - Assisted three (3) community anchors with proposals to build fiber under the Educational Technology Initiative organization type.
- New Members/Customers since the last Commission meeting (Dec 2, 2019)
  - Town of Fairfield
  - Stonington Free Library (Ph5)
  - Town of Washington (ISP for town center WiFi Project)
  - Acton Public Library – Old Saybrook (Ph5)

## 2. Ignite Innovation

- Firewall Service <https://ctedunet.net/managed-firewall/>
  - Goal is to provide a high quality, high capacity, next generation firewall experience that can scale with member bandwidth growth and provide a front-line defense for our organizations.
  - Two versions offered:

- Virtual firewall (vFirewall) - member managed rulesets and policies
- Managed Firewall (mFirewall) partner Managed Security Services provider managing rulesets and policies on behalf of members
- Both submitted to USAC for eligibility
- Incremental growth, 16 members committed, 4 utilizing.
- Bid on 30 additional through E-Rate form 470 process. Some require/dependent on Category 1 ISP in addition to Category 2 Firewall.
- Cloud Connect Service <https://ctedunet.net/cloud-connect/>
  - Goal is to provide connectivity to cloud providers to enable more advanced and robust services at scale to benefit member business and service needs.
  - In partnership with Internet2, no-cost transport for community anchor institutions to Amazon Web Services, Google Cloud Platform, and Microsoft Azure Express Route
  - Since announced in April, four members committed and are in various stages of progress
  - Offering now includes the original shared bandwidth model (no additional cost) and dedicated bandwidth model (for fee, 10Gbps min commit).
- Eduroam <https://www.eduroam.us/>
  - Goal is to help with digital divide issues impacting students in learning areas and provide more seamless network access experience for students attending Hartford Magnet Trinity College Academy.
  - Tom Dillon helping coordinate activities as CET Infrastructure Advisory Council Chair, with CEN resource and fiscal support.
  - Pilot districts and neighboring Higher ed include: Metro Hartford Information Systems (MHIS) and Trinity College, Middletown Public Schools, Library, and Wesleyan University, New Haven Public Schools and SCSU, Stratford Public Schools.
  - Discussions with Internet2 on programmatic approach to rolling out the service across a state.
- Other services are in development and will be prioritized based on community feedback
  - <http://bit.ly/CENSurvey19>
  - 166 responses to date. Survey results will be shared with members when complete.

### 3. Foster Collaboration

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- CEN Member Town Halls
  - Town halls meetings scheduled throughout the state to further engage with the membership, hosted by member institutions and covering strategy, service updates, community training and future requests, expanded Member Conference, question and feedback.
  - Dec. 6 - Fairfield, Fairfield University, 16 attended
  - Dec. 13 - Litchfield, EdAdvance, 20 attended
    - Previous series
    - Nov. 5 - Hartford, 55 Farmington Ave, 50 attended
    - Nov. 15 - New Haven, SCSU, 25 attended
    - Nov. 22 - Groton, UConn Avery Point, 12 attended
- Engagement and Development Advisory Council (EDAC)
  - Chairs: Karen Warren (Wesleyan); Rebecca Osleger (Suffield)
  - **2019 CEN Annual Conference: May 7-8, Hartford CT** <http://bit.ly/CENMemberCon2020>
    - May 7: Pre-conference workshops and training
    - May 8: Main event with our traditional CEN Annual Conference format
    - 55 Session proposals submitted, 28 selected for session tracks, TBD on poster sessions.
    - 307 registered as of 3/2/2020



- 20-year celebration of connecting Connecticut's communities
- Service Management Advisory Council (SMAC):
  - Chairs: Matt Ross (Farmington Public Schools), Jonathan Garbutt (SCSU)
  - Survey for additional services and prioritization complete. Next steps are to report on and plan for potential services to validate, pilot with members, and add to the portfolio.
  - Second CIPA filtering option decided. Under contract negotiations now.
  - Assisting with service lifecycle criteria from inception to sunseting, steady progress.
- Technical Advancement Advisory Council (TAAC)
  - Chairs: Kevin Ross (Plainville Public Schools and town), Tim Sheets (Yale)
  - Developing technical criteria for NextGen CEN network
  - Second CIPA filtering option decided. (collaboration with SMAC)
- Quilt
  - CEO Roundtable - Director Kocsondy is the Chair for 2020. Roundtable in-person summer meeting will be in Hartford as is customary for the chair to host.

## 4. Promote Advocacy

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- Newsletter – January 16<sup>th</sup> - <https://ctedunet.net/2020/01/27/winter-newsletter/>
- E-Rate Webinar – Category 2 Enhancements
  - Review USAC Category 2 enhancement with E-Rate Provider Services
  - Increased benefit to K-12 School & Libraries for funding year 2020 - 7/1/2020-6/30/2021
  - Highlights include: Cat2 Budget made permanent, per pupil budget increase, transition year eligibility (current year)
- Quilt Circle
  - Submitted article on CEN Activities for the Quilt Circle annual publication describing the CEN-Member partnership model and progress over the past year.
- CT Association of School Board Officials (CASBO) – March 13 Presentation on future services defined by SMAC survey and approach.

## 5. Enhance Core Resources

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- CEN Staff
  - CEN currently has 10 full-time staff members, 6 part-time student workers, and 1 volunteer (1 day /week).
  - Molly Zipkin, Program Administrator, started 1/31.
  - Network Engineer 3 candidate interviews underway.
  - Kayla Rettburg took a new position 1/31 at UConn ITS after 6 years with CEN (student since 2008).
  - Financial Assistant 2 Search closed; candidate reviews sent to HR for compliance.
  - Business Services Supervisor is no longer with the University.
- Internet Routing Registry Updates
  - The Internet Routing Registry (IRR) is a globally distributed routing information database. The IRR consists of several databases where network operators publish their routing policies and routing announcements so that other network operators can use this data.
  - Consistent with the previous year's effort to become MANRS complaint, CEN performed comprehensive IRR updates in both ARIN and RADB for all directly attached members ensuring member information to IP address allocation is current.



- This multi-month endeavor finished in late December and is important due to major carriers and service providers such as Hurricane Electric and Google announcing filtering policies (i.e. dropping traffic) based on incomplete or missing IRR information.
- Server Infrastructure Replacement Project
  - Current infrastructure is in progress of being replaced, roughly 8 years old.
  - New compute infrastructure will save on staff management time, increase capacity, lower power consumption, and reduce rack space.
  - Target completion mid-April
- Policy Review
  - Incremental progress. Plan is to revise / update as needed, circulate to CEN Advisory councils for comment, submit to CET for the June meeting.
- Funding: \$1.5M Bond authorized & allocated to CEN
  - Monies to target the distribution layer of the network that is end of life/end of support
  - Final designs being put together for procurement towards summer implementation.
  - Note: Federal tariff on network hardware products manufactured in China resulting in a 10-25% increase in hardware equipment costs
- Extranet Projects
  - NEREN Collaboration (MA, ME, NH, NY, RI, VT) for increased connectivity into NYC and Boston areas as the busiest telco areas in the Northeast, increasing CEN's capability and reach.
  - Will result in more diverse options and lower commodity Internet rates, increase commercial peering to reduce costs, backhaul opportunities to Ashburn (VA) and Chicago, and peering partnerships with other Regional Optical Networks (RONs) within the research and education network space.
  - Will align a Tier 1 Carrier/Backbone Internet Service Provider and Internet2 to each of the 3 Core sites at 100Gbps handoff each.
  - Massachusetts – Boston and Cambridge
    - 2x100 Gbps link turned up in Cambridge, Ma (300 Bent Street)
      1. 3x10 Gbps peering to Mass-IX
      2. Direct peering with NEREN partners
    - 2x100 Gbps link turned up in Boston, Ma (Markley Building)
      1. GTT (Tier 1 Backbone Internet Provider) – 20 Gbps Commit on 100Gbps Handoff
  - New York - Manhattan -32 Avenue of the Americas
    - 2x100 Gbps connectivity equipment received. Installing this month.
    - RFP for IP transit closed; procurement compliance review complete in late January; released to review committee in mid-February; evaluation projected complete in March.
    - Agreement for DE-CIX peering exchange completed contracting and turn up dates being planned now. Previously delayed for months over separate OPM form for CHRO compliance even though non-discrimination form was already signed in the main contracting effort.

