



Connecticut Education Network Policies, Process & Procedures

Title:	CEN Bandwidth Usage Assessment Policy
Applies to:	CEN directly connected members
Effective Date:	September 1, 2022
Contact:	CEN Member Services Manager, CEN Director

OVERVIEW / BACKGROUND

CEN utilizes a tiered bandwidth pricing model, and CEN members have access to their real-time and historic bandwidth usage graphs at [CEN Grafana](#). Members commit annually on a fiscal year basis to a bandwidth tier, or committed data rate (CDR), for each active handoff port. This policy defines the process for assessing and assigning bandwidth tiers for all directly connected members for the purposes of billing and planning capacity upgrades. Directly connected members are defined as "on-net;" please see the DEFINITIONS section below for additional information regarding "on-net."

This CDR model provides CEN members a pricing system that is flexible, predictable, and uncomplicated with additional charges. The bandwidth usage flexibility is evident in that CEN offers a 1 Gbps, 10 Gbps, or 100 Gbps handoff without rate limiting, i.e. "burst-ability." This burst-ability allows members to utilize more bandwidth when needed for unique events without additional charges. The burst-ability to CEN handoff speeds of 1 Gbps, 10 Gbps, or 100 Gbps does not apply to those sites that are connected via PSDN or a third party lit service (e.g. Frontier). CEN utilizes the 95th Percentile Calculation to allow for bursting 5% of the time. 95th Percentile Calculation measures bandwidth usage for comparison against each member's CDR(s). Please see the DEFINITIONS section below for additional information on the calculation of the 95th Percentile.

Measuring and assessing member's actual bandwidth usage is conducted in October of each fiscal year for purposes of determining their bandwidth tier placement(s) in the subsequent fiscal year. In the assessment process, CEN will review 30-day periods across any of the prior 12 months to determine the period of highest regular usage. This allows CEN Member Services staff to notify any member who is subject to a tier increase for the subsequent fiscal year no later than November 1. This provides members the ability to build their budget proposals for the next fiscal year. CEN does not typically charge for overages in the current fiscal year. Continued bandwidth usage above the member's committed amount for 60 days within a 90-day period may, at CEN's discretion, result in a charge for the increased amount. All traffic on all active interfaces, Internet and on-net traffic, is considered billable bandwidth usage.

POLICY / PROCESS

A CEN member's tier placement is determined annually in October and/or as needed by CEN Member Services staff utilizing the Global NOC internal tool. This tool measures each billable interface with the following criteria:

1. 95% usage to eliminate the highest 5% of data points
2. 30-day data sampling window from the prior 12 months

DEFINITIONS

95th Percentile Calculation: For purposes of this policy, samples of bandwidth utilization rates of both inbound and outbound traffic from the active member port(s) are collected and aggregated in one-minute intervals over a calendar month. The resultant data samples are sorted from highest to lowest by Mbps. The highest five percent (5%) of samples are discarded, and the highest remaining sample taken from either direction is used as the 95th percentile value.

On-net: For purposes of this policy, on-net, or on-network, sites are those member locations that are connected to a CEN network device and subscribing to a lit service. This CEN network device may or may not be located at the member service delivery address. Connections to the CEN network device can include leased or dark fiber solutions lit by the member or 3rd party equipment.