

# Scale-based Fee Model for Internet2 Higher Education Members

November 13, 2024

## Executive Summary

Internet2 fees for higher education members sustain the core of Internet2's operations. These fees are known as Sustaining Contributions (SCs), and consist of two components: membership dues (51% of the 2025 SC) and network participation fees (NPF; 49% of the 2025 SC).

The calculation of any single institution's Sustaining Contribution is based on two institutional financial scale factors: total annual expenditures, and total annual research expenditures. These two financial factors are derived from institutionally self-reported data to IPEDS (the Integrated Postsecondary Education Data System). To calculate an institution's SC, an average of three years of data for each of these scale factors is computed. Periodically, Internet2 will update the years on which the two scale factors are based and calculate a new baseline Sustaining Contribution for each institution. Once established, subsequent annual (baseline) increases to institutional SCs are determined by the Internet2 Board of Trustees.

The average total expenditure and the average research expenditure are utilized to calculate a member's SC based on a formula designed to maximize consistency and fairness across all member institutions. The resulting SC is capped at an amount known as the MaxSC, and the minimum any institution will contribute is known as the MinSC.

Internet2 most recently updated the years utilized for its scale factor data in late 2023 for its calculation of 2024 baseline SCs utilizing the most recent IPEDS data available. That data was for fiscal years 2019, 2020 and 2021.

For 2025, there is a zero percent (0%) baseline increase to 2024 SCs. However, due to the use of updated scale data in 2024, some institutions will continue to realize an increase or decrease as they move toward their recently re-calculated SCs. If a member's calculated SC is more than five percent higher than their previously invoiced SC, that increase is capped at five percent. If a member's calculated SC is lower than their current invoiced SC, the institution will move to their calculated SC with no cap on that decrease. The MaxSC and MinSC remained unchanged for 2025 at \$108,662 and \$12,706, respectively.

Special pricing does exist for some specific classes of higher education institutions and system offices. Details regarding the model, its intentional underpinnings, data sources, various special cases that have been developed, and other aspects are provided in the following sections.

## Background and design

As a membership organization, Internet2 and its members have an interest in Internet2 operating in ways that treat individual higher education members as consistently and fairly as possible. The Internet2 fee model for higher education (HE) members addresses those fees that a member pays simply because it is a member – membership dues and network participation fees (NPF) – and recognizes these as funding to sustain the core of Internet2’s operations, or Sustaining Contributions (SC). Examples of these types of core operations are, for membership dues, higher education membership support, communications, events and meetings support, global programs and relationships, and contributions to the core leadership and administration of the Internet2 organization. And for network participation fees - the national backbone network, direct high-capacity access to major cloud service providers and commodity ISPs, and the core network services leadership and staffing. Both membership dues and network participation fees are required components for Internet2 membership.

The scale-based fee model for Internet2 higher education members was created at the recommendation of member task forces, as a scale-based fee model more accurately reflects reasonable proportional expectations of our members’ ability to financially support Internet2 and its programs. The scale-based model is based on institutional data from a single source, IPEDS (Integrated Postsecondary Education Data System) survey administered by the National Center for Education Statistics, U.S. Department of Education. The model utilizes both total expenditures and research expenditures which are institutionally self-reported, and nationally recognized and standardized by reporting definitions.

## The model

The Sustaining Contribution (SC) model multiplies each scale parameter (expressed in millions of dollars; truncated, not rounded) by a separate rate factor and then sums those to determine the SC, which is further constrained by a maximum and minimum amount of SC:

$$SC = (RX * r) + ((AX - RX) * a)$$

**Subject to MaxSC and MinSC**

Where:

**AX** = Average Annual Expenditures (IPEDS; in millions of dollars, truncated)

**a** = multiplier on AX-net-of-RX (\$ per million of AX-RX)

**RX** = Average Annual Research Expenditures (IPEDS; in millions of dollars, truncated)

**r** = multiplier on RX (\$ per million of RX)

**MaxSC** = Cap set on total Sustaining Contribution

**MinSC** = Minimum total Sustaining Contribution

The SC contains both dues and network participation components, so all higher education members contribute to both dues and network participation fees. These are set proportionally within the SC on the basis of the revenue budgets approved by the Internet2 Board of Trustees. In 2025 the revenue budgets for higher education dues represent 51% of the SC, and network participation fees 49%.

The model has seven parameters, each of which may be managed to achieve the desired overall funding level and its distribution across the higher education membership:

1. **The “base years” for the AX and RX figures.** The institutional scale data used in any year are the most recent sets of validated data available from IPEDS at the time of fee-setting, with the “base data” ideally being updated every three years. The most recent base data update was undertaken for the 2024 fees year and includes data from 2019, 2020 and 2021.
2. **a.** The rate multiplier on “all other expenditures”, that is, total expenditures net of research expenditures -- this is done to avoid double-counting the RX amount.
3. **r.** The rate multiplier on research expenditures, RX.
  - a. The original derivation of these multiplier amounts was simply to find a scale-based-model SC distribution across the members that most closely mimicked the then-existing Carnegie-based-model distribution. Explicit involvement of RX in the model takes the research volume of a member into account, as research activity as a key driver of Internet2 activities and their timing. Members recommended that the rate multiplier on the RX scale dimension be several times larger than the rate multiplier on the AX-RX scale dimension, something like 80–20 or 85–15 ratios. This current ratio is essentially 84-16.
4. **MaxSC.** The maximum SC amount.
5. **MinSC.** The minimum SC amount.
6. **Limit on SC increase year-to-year.** Percentage maximum (of the prior year’s SC) that any single member’s SC may increase from one year to the next; this is used to dampen large changes in SC due to atypical increases in the member’s updated scale data.
7. **Limit on SC decrease year-to-year.** Percentage maximum (of the prior year’s SC) that any single member’s SC may decrease from one year to the next; this is used to avert the risk of a member’s SC going down one year only to go back up the following year (e.g., due to a scale data update), something members have told us they prefer not to see happen.

## 2025 fee setting

For 2025, the SC model parameters are the same as in previous years:

**MaxSC = \$108,662.** Rationale: This represents a 0% increase over the 2024 MaxSC rate. Note that members that are impacted by the MaxSC have calculated SCs typically far larger than the MaxSC limit.

**MinSC = \$12,706.** Rationale: This is the same as the 2023 and 2024 MinSC rate. In a first step toward making Internet2's membership fees more affordable to smaller institutions, the MinSC has not increased in several years.

**a = \$75 and r = \$380.** Rationale: These are the same rate multipliers used since 2019, so the proportional "expense load" that Internet2 SCs impose on its members remains unchanged.

Internet2 updated institutional scale data for the 2024 SC calculation, and the 2024 invoices began the process of moving institutions to their new calculated SC.

For 2025, there is a zero percent (0%) baseline increase. However, due to the use of updated scale data, some institutions will continue to realize an increase or decrease as they move toward their calculated SCs. If a member's calculated SC is more than 5 percent higher than their previously invoiced SC, we capped that increase at 5 percent. If a member's calculated SC is lower than their current invoiced SC, they will move to their calculated SC with no cap on that decrease.

## Special cases on higher education membership pricing

**Institutions offering *only* a limited, focused range of medical, dental, nursing and/or other allied health and health sciences degree programs, often associated with large academic medical centers or clinical operations: SC = capped at 75% \* MaxSC.**

Rationale: These institutions typically represent a small number of degree programs in very focused health and health science fields -- far fewer degree programs and more tightly focused overall than the typical higher education member of Internet2. At the same time, these institutions typically have large operating budgets (due mainly to clinical operations) and large research activity portfolios, often on a scale equivalent to or even larger than many of the largest universities. As such, their scale-based SC would typically hit the MaxSC amount, even though they are not "full spectrum" academic institutions.

As with many other aspects of this scale-based SC model, the 75% scaling to the MaxSC has a legacy basis. The old Carnegie Classifications put these institutions into Classifications 25 or 26, "Special Focus Institutions – Medical". When we were utilizing Carnegie Classifications as the basis for determining membership fees, we had a separate "Spec Med" category of higher ed

membership just for these institutional types. At the time of transition to the scale-based model, the 75%-of-MaxSC figure provided the scale-based fees most nearly equivalent to the fees assessed to “Spec Med” higher ed members in our former Carnegie-classification-based model.

**Independent research institutes that grant degrees: SC = \$39,827.** These are research institutes that are independent legal entities, not an integral part of a university. When they do grant degrees of their own (not from an affiliated university) Internet2 recognizes them as higher education members, although typically only a very small number (<10) of doctoral diplomas are granted per year. Their overall scale is modest -- typically a few hundreds of millions of dollars (\$200 – \$400 million) -- but nearly all of this is accounted for by their RX (their operating budgets are typically only a few tens of millions), which would set their SC at MaxSC in the model, and that is far too high given their limited operating budgets.

At the time of initial model-building (2017) our former approaches to fees offered no focused guidance for this category. A SC on the order of \$35,000 then was within the range of former applicable fees and tested well among our advisory group and our existing member in this category – high enough to represent a meaningful sustaining contribution, but not so high as to make the membership fee out of reach. Levels for subsequent years include any baseline fee increases in the SC model.

**System offices as individual members: SC = MinSC.** Rationale: Internet2 has a small number of higher education system offices wishing to be members of Internet2 on their own, outside of any system-wide membership arrangement. There is tremendous variation in what these offices represent, as their budgets and staffing may range from very large to very small, but since their basic function remains largely the same in all cases it makes best sense to price them uniformly. The MinSC is seen as the most appropriate pricing level for these.

**System memberships:** Since 2012 Internet2 has had a standard approach to pricing membership for entire higher education systems. These include the classic systems of state public colleges and universities as well as consortia of (typically private) colleges that collaborate at a high level and have formed a formal legal entity through which to organize their collaboration. The intention of these memberships is to streamline membership for all institutions in a system, and encourage them all to implement InCommon, eduroam, and hopefully one or more cloud services across the entire system.

The system membership model has the following design elements:

- **The system must enroll all its 4-year degree granting institutions** in the system membership, and may additionally enroll all or some of its 2-year program or tribal college members;

- **Any institutions in the system with RX >= \$45 million are priced at their full SC** (consistent with the CAP eligibility criteria, see below);
- **All other institutions in the system are priced at 80% \* SC;**
- **The system office is included in the membership at no charge;**
- **InCommon participation fees are subsidized from the SC;** currently, 50% of annual InCommon participation fees are paid from the Dues component of the SC, reducing the actual cost of the member's total fees;
- **eduroam participation fees are waived** consistent with Internet2 individual institutional memberships and to encourage participation;
- **Each campus in the system, and the system office, is treated as an individual member of Internet2.**
- The SC fees are combined for the entire system and invoiced to the system office; this affords flexibility for the system to make its own determinations as to how the costs will be distributed (or not) across the constituent campuses;

**Multiple-campus individual Internet2 memberships (MCIM):** The Internet2 bylaws note that higher education ("University") members are "institutions of higher education", but do not provide a definition of an "institution." The scope of an "institution" is obvious when it involves only a single campus, and this has been the default assumption Internet2 has made about its higher education memberships. Under the scale-based membership fee model for our higher education members, this default has become more intrinsic to our business practices as we typically include only those scale data reported for the principal campus in our calculation of each member's annual Sustaining Contribution (SC).

However, a single "institution" may operate across multiple locations, and we needed a way to distinguish multi-campus situations involving campuses that are legal parts of a single principal institution (so may be included within the principal institution's individual Internet2 membership), from those involving multiple institutions/campuses that are separate legal entities (each of which should be an individual member of Internet2).

Default assumption: The default assumption is that an individual higher education Internet2 membership includes only the single principal campus of the member institution.

Eligibility for inclusion of subsidiary institutions within a single individual principal institutional Internet2 membership. A single individual Internet2 institutional membership may be expanded in scope to include additional subsidiary institutions/campuses ("multi-campus individual membership", or "MCIM") that strictly meet the following characteristics:

- All related campuses are an integral part of the same, single legal entity. Any subsidiary institution/campus that is separately incorporated may not be included in the individual membership of another institution and must have its own individual membership to enjoy membership benefits.

- There is no *free-standing* purely administrative related entity or organizational unit called or acting as a “system office”; for these purposes, a “system office” is a purely administrative entity that operates separately from any of the campuses (even if located on one of the academic campuses) and does not itself grant academic degrees. Use of the word “system” in the name of a related entity implies a system structure not eligible for this MCIM arrangement.
- A subsidiary campus with annual research and development expenditures equal to or greater than \$45,000,000 (or the current threshold for determining Internet2 CAP eligibility, if different) may not be included in this MCIM arrangement and must be an individual member of Internet2 to enjoy membership benefits.

#### Impacts on membership and membership fees

- The default assumption is that an individual higher education Internet2 membership includes the single principal campus of the institution. These business practice rules will be applied when the need arises to make a definitive determination regarding whether and which other subsidiary campuses may be included under the principal institutional membership (i.e., in a MCIM arrangement). When any such determination is made it will be appropriately recorded in the related Internet2 business records regarding the membership.
- Subsidiary institutions meeting the characteristics above may be included as integral parts of a single Internet2 institutional (MCIM) membership, upon the request and at the discretion of the principal institution (which is “the member”).
- Under Internet2’s scale-based method for setting the annual Sustaining Contribution (SC) of an individual member, the scale data for all of the subsidiary campuses to be included in the MCIM are added to those of the principal institution/campus in order to calculate that member’s SC. The MaxSC and MinSC limits for individual memberships continue to apply. If the principal member is a “Special Med” or health-professions-only institution subject to the special (lower) SC cap, the addition of subsidiary institutions will apply up to the MaxSC.
- Only the principal institution is recognized as a member in the Internet2 membership roster, and only the principal institution is granted a single vote in Internet2 governance processes. The subsidiary institutions/campuses included in the MCIM of the principal institution are not recognized as individual members of Internet2 and are not eligible to vote in Internet2 governance processes. However, the subsidiary campuses are eligible for the other membership benefits available to, and arranged by and through the authority of, the principal institutional member such as participation in eduroam, InCommon,

NET+ cloud services, or other membership benefits as may be determined by Internet2 (and subject to change).

- Subsidiary campuses eligible to be included in the MCIM of a principal institution must each meet the requirements for Internet2 University (higher education institution) membership defined in Internet2's bylaws.
- In situations where any of the MCIM qualifying characteristics are not met, the Internet2 system membership arrangement may be an option.

### **Communicating SC amounts and invoicing**

The upcoming year's SC amounts are approved at the summer Internet2 Board of Trustees' meeting. The CIO, membership billing contact, and network participation billing contacts are emailed following this resolution and informed of their institution's SC for the upcoming calendar year.

Both membership dues and network participation fees are required components for Internet2 membership. These can be invoiced separately or together. Membership dues are invoiced for January 1 by default or for July 1 upon a member's request. Network participation fees are invoiced on the date the network participation agreement was executed, though members can request the network participation invoice to realign with invoicing of membership dues.

### **Internet2 Community Anchor Program eligibility**

To encourage broader research and educational uses of the Internet2 network since its inception, Internet2 has offered eligibility to connect to and pass traffic across the network to non-members through the Internet2 Community Anchor Program (CAP) -- originally called SEGP (Sponsored Educational Group Program), then U.S. UCAN (United States Unified Community Anchor Network). This is done state-by-state, with a separate fee paid to Internet2 at the state level to participate in the program. As this program has the intention of broadening use of the network to institutions that might not fit the usual profile of regular Internet2 members, but was not intended as an alternative to network access for institutions that *should* be regular constituents of the collaborative membership community, there has always been the requirement that any higher education institution with high research activity or above must be a member of Internet2 to use the network – that is, these institutions may *not* use the network via the CAP program.

With the change to a scale-based fee model, and current usage of the IPEDS database for determining RX, **a threshold of RX = \$45 million is currently used to determine CAP eligibility.** Institutions with  $RX < \$45$  million can connect to the Internet2 network (via their regional provider) through the CAP program while institutions with  $RX \geq \$45$  million must become Internet2 members to utilize the Internet2 network.