Nominating Committee Eligibility

Abstract

   The IETF Nominating Committee (NomCom) appoints candidates to several
   IETF leadership committees. RFC 8713 provides criteria for NomCom
   membership that attempt to ensure NomCom volunteers are members of
   the loosely defined IETF community, by requiring in-person attendance
   in three of the past five in-person meetings. In 2020 and 2021, the
   IETF had six consecutive fully online plenary meetings that drove
   rapid advancement in remote meeting technologies and procedures,
   including an experiment that included remote attendance for NomCom
   eligibility. This document updates RFC 8713 by defining a new set of
   eligibility criteria from first principles, with consideration to the
   increased salience of remote attendance. This document obsoletes
   RFCs 8788 and 8989.

Status of This Memo

   This memo documents an Internet Best Current Practice.

   This document is a product of the Internet Engineering Task Force
   (IETF). It represents the consensus of the IETF community. It has
   received public review and has been approved for publication by the
   Internet Engineering Steering Group (IESG). Further information on
   BCPs is available in Section 2 of RFC 7841.

   Information about the current status of this document, any errata,
   and how to provide feedback on it may be obtained at
   https://www.rfc-editor.org/info/rfc9389.

1. Introduction

   [RFC8713] defines the process for the selection of the Internet
   Architecture Board (IAB), Internet Engineering Steering Group (IESG),
   IETF Trust, and the IETF LLC Directors. A key actor in the process
   is the Nominating Committee (NomCom), which nominates a single
   candidate for each open position. Nominations are subject to
   confirmation by other bodies.

   NomCom voting members are randomly selected from a pool of volunteers
   that have met certain eligibility requirements. Thus, it is
   important that members of the pool be IETF participants likely to
   have knowledge of IETF processes and practices. There are
   restrictions to ensure that no more than two volunteers with the same
   primary affiliation are chosen.

   Section 4.14 of [RFC8713] requires volunteers to have attended three
   of the previous five meetings. In practice, this meant that the
   volunteer picked up their registration badge at an in-person meeting.
   Current members of the Internet Society Board of Trustees and bodies
   for which the NomCom nominates members are ineligible.

   [RFC8989] specified an experiment in the wake of six consecutive
   fully online meetings from 2020 to 2021, because the historic
   interpretation of the requirement would have resulted in no eligible
   volunteers. It extended the meeting attendance requirement to
   include logging in to at least one session of a fully online IETF
   meeting.

   [RFC8989] also created two other tracks to obtain eligibility: (1)
   serving as a working group chair or secretary in the past three
   years, and (2) being an author or editor of an IETF Stream RFC in the
   past five years, which includes Internet-Drafts in the RFC Editor
   queue.

This document discusses some of the first principles that inform the design of NomCom eligibility, and makes recommendations on how the process of attendance-based qualification should work.

This document replaces the attendance criteria in the first two paragraphs of Section 4.14 of [RFC8713] with the criteria described in [RFC8989], and it obsoletes RFC 8989 to clarify that the document has been superseded. All other text in [RFC8713], including the other paragraphs of Section 4.14, remains unchanged.

[RFC8788] established procedures for the 2020-2021 NomCom. While, by definition, [RFC8788] does not apply to future NomComs, this document formally obsoletes it.

2. NomCom Principles

The NomCom is intended to be composed of randomly selected members of "the community." For many years, in-person attendance was a reasonable proxy for the commitment associated with being a member. Two days of travel and an attendance fee is a relatively large expenditure of time and money. Additionally, in-person attendance is thought to increase personal familiarity with candidates for leadership positions and with the spirit of the IETF, although there is no mechanism to ensure any interaction.

A basic principle of the IETF is that the community should govern itself, so volunteers must have a demonstrated commitment to the IETF. Limiting the number of volunteers sponsored by any one organization avoids the potential for mischief that disrupts IETF operations or works against the interests of the community as a whole.

A requirement for in-person attendance has always excluded some from qualifying for the NomCom. However, as attitudes to business travel evolve and remote meeting technology continues to improve, many longstanding community members are choosing to participate remotely (due to cost or personal reasons). In addition, the NomCom has completed two cycles using entirely online tools.

Expanding the attendance requirement to include remote attendance lowers the barriers to entry. As the IETF has historically provided a fee-free remote participation option, via waiver or otherwise, the only required investment is to log on once per meeting at a specific time (sometimes a locally inconvenient hour). While this document does not formally impose a requirement for the NomCom to function entirely remotely, including remote-only attendees in the pool is likely to effectively require a remote component to NomCom operations.

Finally, overly restrictive criteria work against getting a broad talent pool.

3. Criteria

The following text replaces the first two paragraphs of Section 4.14 of [RFC8713]:

Members of the IETF community must satisfy the conditions in one of three paths in order to volunteer. Any one of the paths is sufficient, unless the person is otherwise disqualified under Section 4.15 of [RFC8713].

Path 1: The person has registered for and attended three out of the last five IETF meetings, either in-person or online. In-person attendance is as determined by the record keeping of the Secretariat. Online attendance is based on being a registered person who logged in for at least one session of an IETF meeting.

Path 2: The person has been a Working Group Chair or Secretary within the three years prior to the day the call for NomCom volunteers is sent to the community.

Path 3: The person has been a listed author or editor on the front page of at least two IETF Stream RFCs within the last five years prior to the day the call for NomCom volunteers is sent to the community. An Internet-Draft that has been approved by the IESG and is in the RFC Editor queue counts the same as a published RFC, with the relevant date being the date the draft was added to the RFC Editor queue. For avoidance of doubt, the five-year timer extends back to the date five years before the date when the call for NomCom volunteers is sent to the community.

4. Security Considerations

4.1. NomCom Capture

The most potent threat associated with NomCom eligibility is that an organization or group of coordinating organizations could attempt to obtain a majority of NomCom positions, in order to select an IETF leadership in support of an agenda that might be self-serving and against the interests of the community as a whole.

Note that [RFC8713] lets the NomCom Chair decide the NomCom voting requirement, so a simple majority may be inadequate. However, seven of ten forms a quorum, so at worst seven NomCom members working together can almost certainly impose their will.

Whatever the merits of admitting remote attendees, it reduces the minimum cost of creating a NomCom-eligible volunteer from three in-person trips of around five days each over the course of at least eight months, to zero financial cost and the time required to log in three times over at least eight months. Some organizations might not be deterred in either case, while others might.

4.1.1. A Surge of Volunteers

A large number of legitimate volunteers makes it quite difficult to control a majority of NomCom slots. Setting aside limitations on the number of selections from any organization, basic probability shows

that to have even a 50% chance of controlling six or more NomCom positions, an attacker needs roughly 60% of the volunteer pool. For example, if there are 300 "legitimate" volunteers, an attacker must produce 365 volunteers to exceed a 50% chance of NomCom capture (see Appendix A).

A sudden surge in the number of volunteers, particularly of people that no one recognizes as a part of the community, is an early-warning sign of an attempt at capture. Anyone with concerns about the integrity of the process should bring those concerns to the IESG to investigate. Where needed, the confirming bodies can take action to invalidate such candidates as defined in Section 3.7.3 of [RFC8713].

While loosening eligibility criteria lowers the cost to an attacker of producing eligible volunteers, it also increases the number of legitimate volunteers which increases the difficulty of an attack.

4.1.2. The Two-per-Organization Limit

The two-per-organization limit described in Section 4.17 of [RFC8713] complicates such a capture attack. To circumvent it, an organization would have to do one or more of the following:

1. coordinate with at least two like-minded organizations to produce a NomCom majority,

2. incentivize members of other organizations (possibly through a funding agreement) to support its agenda, and/or

3. propose candidates with false affiliations.

While the IETF does not routinely confirm the affiliation of volunteers, as part of an investigation it could eliminate volunteers who have misrepresented said affiliation. Publishing the list of volunteers and affiliations also gives the community an opportunity to review the truth of such claims.

Assuming that 300 legitimate volunteers are all from different organizations, three conspiring organizations would need 771 volunteers (257 per organization) for a 50% chance of NomCom capture (see Appendix A).

4.1.3. One Year of Participation

Attendance at three meetings requires at least eight months of waiting. Given the volume of volunteers necessary to capture the process, an attack requires a surge in attendees over the course of a year. Such a surge might trigger a community challenge to the list of eligible volunteers, and/or a leadership investigation to detect suspicious behavior (e.g., logging in to a single session and then immediately logging out). In the event of abuse of process, the leadership would then have months to adjust policy in response before the NomCom cycle begins, and/or disqualify candidates.

4.2. Disruptive Candidates

Note that counting remote participation towards NomCom eligibility
allows for a single individual to mount an attack that previously
required coordination. By registering for remote attendance to IETF
meetings using a number of different identities over a year, an
individual can make each of those identities NomCom eligible and then
serve under any one of them that is selected for the NomCom. Once
selected, an individual could seek to disrupt the process or prevent
the timely conclusion of its work. Less severely, an attacker could
simply improve their chances of being selected for NomCom.

This attack is much harder to detect or prevent than equivalent
attacks were previously, as it does not require coordination among
multiple attendees. While the attacker cannot be sure of fee waivers
for some or all of the different identities, the lower cost for
remote participation also makes this attack more feasible than it
would have been under prior rules.

However, the voting member recall procedure in Section 5.7 of
[RFC8713] exists to allow removal and replacement of disruptive
figures.

4.3. Additional Remedies

Additional changes to the process to further obstruct attacks against
the NomCom are beyond the scope of this document. However, a
challenge process against volunteers with a suspicious reported
affiliation, or that might be aliases of a single volunteer, could
trigger an investigation.

Similarly, the challenge to the random selection described in
Section 4.17 of [RFC8713] can explicitly include appeals against the
data used to qualify the volunteer, rather than the randomization
process.

5. IANA Considerations

This document has no IANA actions.

6. References

6.1. Normative References

[RFC8713] Kucherawy, M., Ed., Hinden, R., Ed., and J. Livingood,
           Ed., "IAB, IESG, IETF Trust, and IETF LLC Selection,
           Confirmation, and Recall Process: Operation of the IETF
           Nominating and Recall Committees", BCP 10, RFC 8713,
           DOI 10.17487/RFC8713, February 2020,
           <https://www.rfc-editor.org/info/rfc8713>.

6.2. Informative References

[RFC8788] Leiba, B., "Eligibility for the 2020-2021 Nominating
           Committee", BCP 10, RFC 8788, DOI 10.17487/RFC8788, May
           2020, <https://www.rfc-editor.org/info/rfc8788>.

[RFC8989] Carpenter, B. and S. Farrell, "Additional Criteria for
           Nominating Committee Eligibility", RFC 8989,
           DOI 10.17487/RFC8989, February 2021,
           <https://www.rfc-editor.org/info/rfc8989>.

Appendix A. NomCom Capture Calculations

Section 4 offers some mathematical results for the probability of
NomCom capture. This appendix shows the work.

Note that the number of combinations of b items chosen from a
population of a items is often expressed as

$$\binom{a}{b} = \frac{a!}{(a-b)!\,b!}$$

Figure 1

A.1. No per-Organization Limit

Appendix A.1 assumes there is no limitation on the number of
volunteers from a given organization. Appendix A.2 assumes that no
single organization produces more than two volunteers.

Let L be the number of "legitimate" volunteers (i.e., those not
allied with an attacker) and A be the number of attacking volunteers.
Then there are the following ways to select a NomCom:

$$\binom{L+A}{10}$$

Figure 2

The number of outcomes where attackers capture the NomCom is:

$$\sum_{i=6}^{10} \left[\binom{A}{i} \binom{L}{10-i} \right]$$

Figure 3

Therefore, the probability of capture is

$$\sum_{i=6}^{10} \frac{\binom{A}{i} \binom{L}{10-i}}{\binom{L+A}{10}}$$

Figure 4

For L = 300, this probability crosses 50% at A = 365.

A.2. Two per Organization

Assume that the population of L is drawn from L different organizations (this assumption is unfavorable to the attacker). Assume also that there are three conspiring organizations. Then no more than 6 members can be drawn from A.

Let B be the number of nominees per attacking organization, so that A = 3B.

The number of combinations to pick exactly N attackers, N <= 6, is

$$C(N) = \binom{L}{10 - N} \sum_{i=0}^{\min(N,2)} \left[\binom{B}{i} \sum_{j=0}^{\min(2,N-i)} \left(\binom{B}{j} \binom{B}{\min(2,\ N-i-j)} \right) \right]$$

Figure 5

And the probability of capture is

$$\frac{C(6)}{\sum_{i=0}^{6} C(i)}$$

Figure 6

For L = 300, the A required to exceed a 50% probability of capture is 771.

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