NSDI '19: 16th USENIX Symposium on Networked Systems Design and Implementation
February 26–28, 2019 • Boston, MA, USA

Sponsored by USENIX, the Advanced Computing Systems Association

Important Dates

Spring deadline:

- Paper titles and abstracts due: **Thursday, May 24, 2018, 6:00 p.m. US PDT**
- Full paper submissions due: **Thursday, May 31, 2018, 6:00 p.m. US PDT**
- Notification to authors: **Saturday, July 28, 2018**
- Final paper files due: **Wednesday, October 17, 2018**

Fall deadline:

- Paper titles and abstracts due: **Thursday, September 13, 2018, 6:00 p.m. US PDT**
- Full paper submissions due: **Thursday, September 20, 2018, 6:00 p.m. US PDT**
- Notification to authors: **Monday, December 3, 2018**
- Final paper titles due: **Friday, February 8, 2019**
- Final paper files due: **Wednesday, February 13, 2019**

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Overview

NSDI focuses on the design principles, implementation, and practical evaluation of networked and distributed systems. Our goal is to bring together researchers from across the networking and systems community to foster a broad approach to addressing overlapping research challenges.

NSDI provides a high-quality, single-track forum for presenting results and discussing ideas that further the knowledge and understanding of the networked systems community as a whole, continue a significant research dialog, or push the architectural boundaries of network services.

Topics

We solicit papers describing original and previously unpublished research. Specific topics of interest include but are not limited to:

- Highly available and reliable networked systems
- Security and privacy of networked systems
- Distributed storage, caching, and query processing systems
- Energy-efficient computing in networked systems
- Cloud/multi-tenant systems
- Mobile and embedded/sensor applications and systems
- Wireless networked systems
- Network and workload measurement systems
- Self-organizing, autonomous, and federated networked systems
- Managing, debugging, and diagnosing problems in networked systems
- Virtualization and resource management for networked systems
- Systems aspects of networking hardware
- Experience with deployed networked systems
- Communication and computing over big data on networked systems
- Practical aspects of economics and verification applied to networked systems
- Any innovative solution for a significant problem involving networked systems

This year, we're making two major changes: we're offering two submission deadlines and we're providing the possibility of getting one-shot-revision decisions in lieu of rejection. To see a detailed explanation of the expected benefits from these changes, see "Additional Information about Multiple Deadlines Process" at www.usenix.org/conference/nsdi19/additional-info.

Two Deadlines

NSDI '19 offers authors the choice of two submission deadlines. Any paper submitted to one of these deadlines and accepted during the subsequent reviewing period will be presented at the conference and will appear as part of the proceedings. In the meantime, authors are permitted to advertise their papers as accepted by NSDI, for example listing them on CVs.

A paper submitted and rejected may not be submitted again to NSDI (even in revised form) until 11 months after the deadline it was submitted to.

One-Shot-Revision

Each paper may be accepted, rejected, or given the option of one-shot-revision. Such a revision decision includes a summary of the paper's merits and a list of necessary changes that are required for the paper to be accepted at NSDI. Authors may then submit a version of their work addressing those needs during the subsequent deadline. At that point, the paper will be reviewed to judge whether it addresses the requirements requested; this review will be conducted, to the extent possible, by the same reviewers as earlier. To enable this, PC members who give one-shot-revision decisions late in a year are obligated to participate as external reviewers in the following year to review those papers' resubmissions, which would be considered for the following year's conference. Papers revised and re-submitted following a one-shot-revision decision can only receive a decision of accept or reject, not revise; this is what makes revisions "one-shot."

The judgment about whether to accept a revised paper will be made as follows. Reviewers will primarily judge whether the authors have satisfied the requests accompanying the revision decision. They will also judge the resubmission on its independent merits, but should avoid rejecting it for non-fatal concerns that they could have raised during the first round of reviews. The reviewers should also ensure that the revised paper doesn't introduce new assertions without sufficient support. Unlike the shepherding process, the requested action points may include running additional experiments that obtain specific results, e.g., comparing performance against a certain alternative and beating it by at least 10%.

During the revision period, the paper is still considered under review to NSDI and therefore cannot be submitted to other conferences unless the authors first withdraw it from consideration. To make this obligation clear, authors who receive a one-shot-revision notification must, within two weeks of the notification, explicitly send an email acknowledging their participation in the one-shot-revision process. That email should indicate they understand that this means the USENIX Submission Policy (www.usenix.org/conferences/author-resources/submissions-policy) precludes concurrent submission to other conferences.

To make a one-shot-revision decision, reviewers must be comfortable accepting the paper if the authors make all the changes requested in it. Most notably, if a paper makes an insufficient contribution, or is incremental, then it should be rejected, not given a one-shot-revision decision. After all, the point of one-shot revision is not to produce highly-polished uninteresting papers, but rather to allow publication of exciting work that's unfortunately submitted in a form that's flawed in a way that can't be fixed with mere shepherding.

Reviewers will also be instructed to not offer a one-shot-revision option if they can't determine that the paper is adequate modulo the proposed revisions. For instance, if the paper is written so sloppily that there may be a hidden deep flaw, then the paper should be rejected, not given a one-shot-revision request to fix the inadequate writing.

Authors given a one-shot-revision decision will be sent, within a few days of the decision, detailed instructions about how to re-submit. These instructions will include the list of necessary changes that are required for the paper to be accepted. They will also explain how the authors should accompany their re-submission with auxiliary material to demonstrate how they've satisfied that list of changes. This auxiliary material will consist of (1) an additional version of the re-submission in which revision changes since the first submission are clearly marked, and (2) a separate textual explanation of the high-level differences between the two versions.

If authors receive a one-shot-revision decision but don't want to submit a revised version, they may withdraw it. In this case, they may not submit the paper to NSDI again until 11 months after the deadline they originally it submitted to.

If authors receive a one-shot-revision decision for a paper submitted to the fall deadline of NSDI '19, this gives them the option to make the requested changes and re-submit it to the next NSDI deadline, which is the first deadline of NSDI '20. If the paper is accepted then, it will appear at NSDI '20, not NSDI '19.

Operational Systems Track
In addition to papers that describe original research, NSDI '19 also solicits papers that describe the design, implementation, analysis, and experience with large-scale, operational systems and networks. We encourage submission of papers that disprove or strengthen existing assumptions, deepen the understanding of existing problems, and validate known techniques at scales or environments in which they were never used or tested before. Such operational papers need not present new ideas or results to be accepted; indeed, new ideas or results will not influence whether the papers are accepted. Note that the rules regarding submission and anonymization are different for operational systems track papers. Since the evaluation of operational systems track papers requires understanding the real-world use of the system, papers in this track will be reviewed in a more limited double-blind process. Authors' names should be withheld, as usual. However, in contrast to other papers, authors need not anonymize the content of their submission in any other way—they may keep company names, links, real system names, etc. as appropriate for the paper. Please note that you cannot switch tracks for your paper after submission since the submission rules differ.

Authors should indicate on the title page of the paper and in the submission form that they are submitting to this track.

The final program will make no distinction between papers accepted from this track and papers accepted from the regular track.

What to Submit
NSDI '19 is double-blind, meaning that authors should make a good faith effort to anonymize papers. Note that the operational track papers have different rules as described above. As an author, you should not identify yourself in the paper either explicitly or by implication (e.g., through the references or acknowledgments). However, only non-destructive anonymization is required. For example, system names may be left de-anonymized, if the system name is important for a reviewer to be able to evaluate the work. For example, a paper on experiences with the design of .NET should not be re-written to be about "an anonymous but widely used commercial distributed systems platform."

Additionally, please take the following steps when preparing your submission:

- Remove authors' names and affiliations from the title page.
- Remove acknowledgment of identifying names and funding sources.
- Do not provide links to your own online content. If this online content is critical to the content of your paper, please see the submission form, which allows for some forms of content upload, or contact the PC chairs.
- Use care in naming your files. Source file names, e.g., Joe.Smith.dvi, are often embedded in the final output as readily accessible comments.
- Use care in referring to related work, particularly your own. Do not omit references to provide anonymity, as this leaves the reviewer unable to grasp the context. Instead, a good solution is to reference your past work in the third person, just as you would any other piece of related work. If you cite anonymous work, you will need to enter the deanonymized reference(s) on the online submission form.

- If you need to reference another submission at NSDI '19 on a related topic, reference it as follows: "A related paper describes the design and implementation of our compiler [Anonymous 2019]." with the corresponding citation: "[Anonymous 2019] Under submission. Details omitted for double-blind reviewing."
- Work that extends an author's previous workshop paper is welcome, but the paper should (a) acknowledge their own previous workshop publications with an anonymous citation and (b) explain the differences between the NSDI submission and the prior workshop paper. The online submission form will also require authors to submit the deanonymized citation and a short explanation of the differences from the prior workshop paper.
- Blinding is not intended to be a great burden. If blinding your paper seems too burdensome, please contact the program co-chairs and discuss your specific situation.

Submissions—as well as final papers—must be no longer than 12 pages, including footnotes, figures, and tables. Submissions may include as many additional pages as needed for references and for supplementary material in appendices. The paper should stand alone without the supplementary material, but authors may use this space for content that may be of interest to some readers but is peripheral to the main technical contributions of the paper. Note that members of the program committee are free to not read this material when reviewing the paper.

New in 2019: Submissions must be in two-column format, using 10-point type on 12-point (single-spaced) leading, in a text block **7" wide x 9" deep, with .33" inter-column space,** formatted for 8.5" x 11" paper. Please note that the text block size has changed.

Papers not meeting these criteria will be rejected without review, and no deadline extensions will be granted for reformatting. Pages should be numbered, and figures and tables should be legible when printed without requiring magnification. Authors may use color in their figures, but the figures should be readable when printed in black and white. If you wish, you may use the template for LaTeX available on the conference paper templates page at www.usenix.org/conferences/author-resources /paper-templates. All papers must be submitted via the submission form linked from the NSDI '19 Call for Papers web page. Please do not email submissions.

Submissions will be judged on originality, significance, interest, clarity, relevance, and correctness.

Policies
Simultaneous submission of the same work to multiple venues, submission of previously published work, or plagiarism constitutes dishonesty or fraud. USENIX, like other scientific and technical conferences and journals, prohibits these practices and may take action against authors who have committed them. See the USENIX Conference Submissions Policy at www .usenix.org/conferences/author-resources/submissions-policy for details.

Previous publication at a workshop is acceptable as long as the NSDI submission includes substantial new material that has been developed since the publication of any earlier version. However, NSDI submissions cannot be concurrent with submission to a workshop venue. If the notification date for the workshop submission is after the submission date for NSDI (as is the case for ACM HotNets 2018), this would be considered a concurrent submission and would be rejected without review. Such concurrent submissions would have limited the possibility of substantially extending the prior work, which would violate the intent of policies allowing for extended submissions (as described in www.sigcomm.org/about/policies /frequently-asked-questions-faq/) See remarks above about how to cite and contrast with a workshop paper.

Authors uncertain whether their submission meets USENIX's guidelines should contact the Program Co-Chairs, nsdi19chairs@usenix.org.

Papers accompanied by nondisclosure agreement forms will not be considered. All submissions will be treated as confidential prior to publication on the USENIX NSDI '19 website; rejected submissions will be permanently treated as confidential.

Ethical Considerations

Papers describing experiments with users or user data (e.g., network traffic, passwords, social network information), should follow the basic principles of ethical research, e.g., beneficence (maximizing the benefits to an individual or to society while minimizing harm to the individual), minimal risk (appropriateness of the risk versus benefit ratio), voluntary consent, respect for privacy, and limited deception. When appropriate, authors are encouraged to include a subsection describing these issues. Authors may want to consult the Menlo Report at www.caida.org/publications/papers/2012/menlo_report_actual_formatted/ for further information on ethical principles, or the Allman/Paxson IMC '07 paper at http://conferences.sigcomm.org/imc/2007/papers/imc76.pdf for guidance on ethical data sharing.

Authors must, as part of the submission process, attest that their work complies with all applicable ethical standards of their home institution(s), including, but not limited to privacy policies and policies on experiments involving humans. Note that submitting research for approval by one's institution's ethics review body is necessary, but not sufficient—in cases where the PC has concerns about the ethics of the work in a submission, the PC will have its own discussion of the ethics of that work. The PC's review process may examine the ethical soundness of the paper just as it examines the technical soundness.

Processes for Accepted Papers

If your paper is accepted and you need an invitation letter to apply for a visa to attend the conference, please contact conference@usenix.org as soon as possible. (Visa applications can take at least 30 working days to process.) Please identify yourself as a presenter and include your mailing address in your email.

Accepted papers may be shepherded through an editorial review process by a member of the Program Committee. Based on initial feedback from the Program Committee, authors of shepherded papers will submit an editorial revision of their paper to their Program Committee shepherd. The shepherd will review the paper and give the author additional comments. All authors, shepherded or not, will upload their final file to the submissions system by the camera ready date for the conference Proceedings.

Paper publishing schedule: A list of papers accepted from the Spring submissions will be posted on the NSDI '19 website in August. In December, when the full program is available, paper titles and abstracts will be posted for all accepted papers from both the Spring and Fall deadlines. At this time, the Spring final paper PDFs will also be posted, accessible only to registered attendees. In February, the full Proceedings as well as all of the final paper PDFs will be posted.

All papers will be available online to registered attendees before the conference. If your accepted paper should not be published prior to the event, please notify production@usenix.org. The papers will be available online to everyone beginning on the first day of the conference.

Best Paper Awards

Awards will be given for the best paper(s) at the conference.

Community Award

To encourage broader code and data sharing within the NSDI community, the conference will also present a "Community Award" for the best paper whose code and/or data set is made publicly available by the final papers deadline, February 13, 2019. Authors who would like their paper to be considered for this award will have the opportunity to tag their paper during the submission process.

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Co-located Workshops

WOOT '18

12th USENIX Workshop on Offensive Technologies
August 13–14, 2018
www.usenix.org/woot18

WOOT presents a broad picture of offense and its contributions. Offensive security today is a large-scale operation managed by organized, capitalized actors, and software used by millions is built by startups less than a year old. In the field's infancy, offensive security research was conducted separately by industry, independent hackers, or in academia, and collaboration between these groups could be difficult. Since 2007, WOOT has brought these communities together to share, explore, and produce high-quality, peer-reviewed work discussing tools and techniques for attack.

ASE '18

2018 USENIX Workshop on Advances in Security Education
August 13, 2018
www.usenix.org/ase18

Educators, designers, and evaluators attend ASE to collaborate, share cutting-edge research in computer security education, improve existing practices, and validate or refute widely held beliefs within the field. The workshop program covers computer security education in various settings and with a diverse set of goals, including developing or maturing specific knowledge, skills, and abilities, and improving awareness of issues in the cyber domain.

CSET '18

11th USENIX Workshop on Cyber Security Experimentation and Test
August 13, 2018
www.usenix.org/cset18

CSET is a forum for researchers and practitioners in academia, government, and industry to explore the significant challenges within the science of cyber security. Presenters and attendees are encouraged to engage in interactive discussions on cyber security evaluation, experimentation, measurement, metrics, data, simulations, and testbeds for software, hardware, or malware.

FOCI '18

8th USENIX Workshop on Free and Open Communications on the Internet
August 14, 2018
www.usenix.org/foci18

Political and social change around the world is driven by Internet communications, which governments and other actors seek to control, monitor, and block using multifarious methods. These threats to free and open communications on the Internet raise a wide range of research and interdisciplinary challenges. FOCI brings together researchers and practitioners from technology, law, and policy who are working on means to study, detect, or circumvent practices that inhibit free and open communications on the Internet.

HotSec '18

2018 USENIX Summit on Hot Topics in Security
August 14, 2018
www.usenix.org/hotsec18

Researchers across computer security disciplines convene at HotSec to discuss the state-of-the-art, with emphasis on future directions and emerging areas. HotSec is not your traditional security workshop! It's a series of lightning talks sessions on emerging work and positions in security, followed by discussion among attendees. The format provides a quick and informal way to share ideas and inspire breakout discussions for the remainder of the day.

Register by July 23 and save!