

# FAST '21: 19th USENIX Conference on File and Storage Technologies

February 22–25, 2021, Santa Clara, CA, USA



Sponsored by USENIX, the Advanced Computing Systems Association

The 19th USENIX Conference on File and Storage Technologies (FAST '21) will take place February 22–25, 2021, at the Hyatt Regency Santa Clara in Santa Clara, CA, USA.

## Important Dates

- Paper submissions due: **Thursday, September 24, 2020, 11:59 pm PDT**
- Tutorial submissions due: **Thursday, September 24, 2020, 11:59 pm PDT**
- Author response period begins: **Monday, November 30, 2020**
- Author response period ends: **Wednesday, December 2, 2020, 11:59 pm PST**
- Notification to authors: **Friday, December 11, 2020**
- Final papers due: **Monday, January 25, 2021**

## Conference Organizers

### Program Co-Chairs

Marcos K. Aguilera, *VMware Research*  
Gala Yadgar, *Technion—Israel Institute of Technology*

### Program Committee

Nitin Agrawal, *ThoughtSpot*  
Marcos K. Aguilera, *VMware Research*  
Woongki Baek, *UNIST (Ulsan National Institute of Science and Technology)*  
Mahesh Balakrishnan, *Facebook*  
Suparna Bhattacharya, *Hewlett Packard Enterprise*  
Janki Bhimani, *Florida International University*  
Angelos Bilas, *Univ. of Crete and FORTH, Greece*  
Randal Burns, *Johns Hopkins University*  
Feng Chen, *Louisiana State University*  
Vijay Chidambaram, *The University of Texas at Austin and VMware Research*  
Natacha Crooks, *University of California, Berkeley*  
Daniel Ellard, *Raytheon BBN Technologies*  
Danny Harnik, *IBM Research—Haifa*  
Dean Hildebrand, *Google*  
Cheng Huang, *Microsoft*  
William Jannen, *Williams College*

Song Jiang, *The University of Texas at Arlington*  
Rob Johnson, *VMware Research*  
Kimberly Keeton  
Patrick P. C. Lee, *The Chinese University of Hong Kong*  
Xiaosong Ma, *Qatar Computing Research Institute, HBKU*  
Peter Macko, *NetApp*  
Ethan L. Miller, *University of California, Santa Cruz & Pure Storage*  
Dalit Naor, *IBM Research—Haifa*  
Don Porter, *The University of North Carolina at Chapel Hill*  
Rob Ross, *Argonne National Laboratory*  
Ken Salem, *University of Waterloo & Amazon*  
Jiri Schindler, *Tranquil Data*  
Russell Sears, *Apple*  
Mehul A. Shah, *Amazon AWS*  
Keith A. Smith, *MongoDB*  
Amy Tai, *VMware Research*  
Vasily Tarasov, *IBM Research*  
Carl Waldspurger, *Carl Waldspurger Consulting*  
Youjip Won, *Korea Advanced Institute of Science and Technology (KAIST)*  
Gala Yadgar, *Technion—Israel Institute of Technology*

### Test of Time Awards Committee

Jiri Schindler, *Tranquil Data*  
Bianca Schroeder, *University of Toronto*

### Tutorial Coordinators

Andy Klosterman, *NetApp*  
John Strunk, *Red Hat*

### Steering Committee

Nitin Agrawal, *ThoughtSpot*  
Angela Demke Brown, *University of Toronto*  
Casey Henderson, *USENIX Association*  
Kimberly Keeton  
Geoff Kuenning, *Harvey Mudd College*  
Arif Merchant, *Google*  
Sam H. Noh, *UNIST (Ulsan National Institute of Science and Technology)*  
Raju Rangaswami, *Florida International University*  
Erik Riedel  
Jiri Schindler, *Tranquil Data*  
Bianca Schroeder, *University of Toronto*



Keith A. Smith, *MongoDB*  
Eno Thereska, *Amazon*  
Carl Waldspurger, *Carl Waldspurger Consulting*  
Hakim Weatherspoon, *Cornell University*  
Brent Welch, *Google*  
Ric Wheeler, *Facebook*  
Erez Zadok, *Stony Brook University*

## Overview

The 19th USENIX Conference on File and Storage Technologies (FAST '21) brings together storage-system researchers and practitioners to explore new directions in the design, implementation, evaluation, and deployment of storage systems. The program committee interprets “storage systems” broadly: submissions on low-level storage devices, distributed storage systems, and information management are all of interest. The conference will consist of technical presentations including refereed papers, Work-in-Progress (WiP) reports, poster sessions, and tutorials.

## Topics

Topics of interest include but are not limited to:

- Archival storage systems
- Auditing and provenance
- Big data, analytics, and data sciences
- Caching, replication, and consistency
- Cloud storage
- Data deduplication
- Database storage
- Distributed and networked storage (wide-area, grid, peer-to-peer)
- Empirical evaluation of storage systems
- Experience with deployed systems
- File system design
- High-performance file systems
- Key-value and NoSQL storage
- Memory-only storage systems
- Mobile, personal, embedded, and home storage
- Parallel I/O and storage systems
- Power-aware storage architectures
- RAID and erasure coding
- Reliability, availability, and disaster tolerance
- Search and data retrieval
- Solid state storage technologies and uses (e.g., flash, byte-addressable NVM)
- Storage management
- Storage networking
- Storage performance and QoS
- Storage security

## Submission Instructions

Please submit your paper by 11:59 pm PDT on September 24, 2020, in PDF format via the submission form linked from the FAST '21 Call for Papers web page. Do not email submissions. There is no separate deadline for abstract submissions.

- The complete submission must be no longer than 11 pages excluding references. **There is no short-paper category.** The program committee values conciseness: if you can express an idea in fewer pages than the limit, do so. Supplemental material may be added as a single separate file without page limits. However, the reviewers are not required to read or consider such material. Content that should be considered to judge the paper is not supplemental and counts toward the page limit.

- Papers must be typeset on U.S. letter-sized pages in two columns using 10-point Times Roman font on 12-point leading (single-spaced), within a text block **7” wide by 9” deep**.
- Labels, captions, and other text in figures, graphs, and tables must use font sizes that, when printed, do not require magnification to be legible. References must not be set in a smaller font. Submissions that violate these requirements will not be reviewed. Limits will be interpreted strictly. No extensions will be given for reformatting.
- A LaTeX template and style file are available on the USENIX templates page ([www.usenix.org/conferences/author-resources/paper-templates](http://www.usenix.org/conferences/author-resources/paper-templates)).
- **Double-blind policy:** Authors must not be identified in the submissions, either explicitly or by implication. To refer to your previous work, consider it as written by a third party. Do not say “reference removed for blind review.” Supplemental material must be anonymized.
- 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 ([www.usenix.org/conferences/author-resources/submissions-policy](http://www.usenix.org/conferences/author-resources/submissions-policy)) for details.
- If you are uncertain whether your submission meets USENIX’s guidelines, please contact the program co-chairs, [fast21chairs@usenix.org](mailto:fast21chairs@usenix.org), or the USENIX office, [submissionspolicy@usenix.org](mailto:submissionspolicy@usenix.org).
- Papers accompanied by nondisclosure agreement forms will not be considered.
- Submission should abide by the Conflict Identification guidelines (see below).

The program committee and external reviewers will judge papers on technical merit, significance, relevance, and presentation. A good research paper will demonstrate that the authors:

- are attacking a significant problem;
- have devised an interesting, compelling solution;
- have demonstrated the practicality and benefits of the solution;
- have drawn appropriate conclusions using sound experimental methods;
- have clearly described what they have done;
- have clearly articulated the advances beyond previous work;

Program committee members, USENIX, and the broader community generally value a paper more highly if it clearly defines and is accompanied by artifacts not previously available. These artifacts may include traces, original data, source code, or tools developed as part of the submitted work.

Blind reviewing of all papers will be done by the program committee, assisted by outside referees when necessary. Accepted papers will be shepherded by a member of the program committee.

## Deployed-Systems Papers

In addition to papers that describe original research, FAST '21 also solicits papers that describe real operational systems, including systems currently in production. Such papers should address experience with the practical design, implementation, analysis, deployment, or operation of such systems. We encourage submission of papers that disprove or strengthen existing assumptions, deepen the understanding of existing problems, and validate known techniques in environments in which they were never before used or tested. Deployed-system papers need not present new ideas or results to be accepted, but should offer useful guidance to practitioners.

A good deployed-system paper will demonstrate that the authors:

- are describing an operational system of broad interest;
- have addressed the practicality of the system in a real environment;
- have clearly explained the implementation of the system;
- have discussed practical problems encountered in production; and
- have carefully evaluated the system with proper statistical techniques

Authors must indicate on the title page and in the submission form that they are submitting a deployed-system paper.

**Double-blind Policy for Deployed-system Paper:** All submissions for FAST '21 are required to follow the double-blind policy (see below). However, only for deployed-system papers, the product or company described in the paper need not be anonymized (authors still need to be anonymized).

### **New in 2021: Authors Response Period**

FAST '21 will allow authors to respond to reviews prior to final evaluation, according to the schedule above. Authors must limit their response to correcting factual errors in the reviews, to addressing questions posed by reviewers, and to clarifying the ideas in the paper. Rebuttals must not include new experiments, new data, new work completed since submission, or promises of additional work. Rebuttals are optional. Rebuttals are limited to 500 words.

### **Conflict Identification**

Upon submitting your paper, authors must indicate conflicts with PC members. A conflict exists in one of the following cases:

**Institution:** You are currently employed at the same institution, have been previously employed at the same institution within the past two years, or are going to begin employment at the same institution.

**Advisor/Advisee:** You have a past or present association as thesis advisor or advisee.

**Collaboration:** You have a collaboration on a project, publication, grant proposal, or editorship within the past two years.

The PC will review paper conflicts to ensure the integrity of the reviewing process, adding conflicts if necessary. If there is no basis for conflicts indicated by authors, such conflicts will be removed. Do not identify PC members as a conflict solely to avoid having them as reviewers. If you have any questions about conflicts, contact the program co-chairs.

### **Author Notification and Beyond**

Authors will be notified of paper acceptance or rejection according to the schedule above. If your paper is accepted and you need an invitation letter to apply for a visa to attend the conference, contact [conference@usenix.org](mailto:conference@usenix.org) as soon as possible. Visa applications can take at least 30 working days to process. Identify yourself as a presenter and include your mailing address in your email.

All papers will be available online to registered attendees no earlier than Thursday, January 28, 2021. If your accepted paper should not be published prior to the event, please notify [production@usenix.org](mailto:production@usenix.org). The papers will be available online to everyone beginning on the first day of the main conference, February 22, 2021. Accepted submissions will be treated as confidential prior to publication on the USENIX FAST '21 website; rejected submissions will be permanently treated as confidential.

By submitting a paper, you agree that at least one of the authors will attend the conference to present it. If the conference registration fee will pose a hardship for the presenter of the accepted paper, please contact [conference@usenix.org](mailto:conference@usenix.org).

## **Best Paper Awards**

Awards will be given for the best paper(s) at the conference. A small, selected set of papers will be forwarded for publication in *ACM Transactions on Storage (TOS)* via a fast-path editorial process.

## **Test of Time Award**

The "Test of Time" award recognizes a paper from a FAST conference at least 10 years prior, based on the paper's lasting impact on the field.

## **Work-in-Progress Reports and Poster Sessions**

FAST will include a short session on Work-in-Progress (WiP) reports presenting preliminary results and opinion statements. We are particularly interested in presentations of student work and topics that will provoke informative debate. While WiP reports will be evaluated for appropriateness, they are not peer reviewed in the same sense as papers.

FAST will hold poster sessions in the evenings. WiP submissions will automatically be considered for a poster, and authors of accepted papers will be asked to present a poster for their paper. Other poster submissions are welcome. The Call for Posters and WiPs will be available in December 2020.

## **Birds-of-a-Feather Sessions**

Birds-of-a-Feather sessions (BoFs) are informal gatherings held in the evenings and organized by attendees interested in a particular topic. BoFs may be scheduled in advance by emailing the Conference Department at [bofs@usenix.org](mailto:bofs@usenix.org). BoFs may also be scheduled at the conference.

## **Tutorial Sessions**

Tutorial sessions will be held on February 21, 2021. Please submit tutorial proposals to [fasttutorials@usenix.org](mailto:fasttutorials@usenix.org) by 11:59 pm PDT on September 24, 2020.

## **Registration Materials**

Complete program and registration information will be available in December 2020 on the conference website.