# **CALL FOR RESEARCH PAPER**

# The annual ACM/IFIP Middleware conference is a major forum for discussing innovations and recent scientific advances in middleware systems with a focus on the design, implementation, deployment, and evaluation of distributed systems, platforms, and architectures for computing, storage, and communication. The conference will include a high-quality single-track technical program, invited speakers, an industrial track, panel discussions involving academic and industry leaders, poster and demonstration presentations, a doctoral symposium, tutorials, and workshops.

### **Topics of Interest**

The Middleware conference seeks original submissions of research papers on a diverse range of topics, particularly those identifying new research directions. The topics of interest for the conference include, but are not limited to:

**Middleware Applications**

* Middleware for cyber-physical and real-time systems
* Middleware support for security and privacy
* Middleware for AI and machine learning systems
* Middleware for data science pipelines
* Middleware techniques for internet-of-things and smart cities
* Middleware for multimedia systems

**Middleware Systems**

* Fault tolerance and consistency
* Distributed and parallel systems
* Distributed ledgers and blockchains
* Event-based, publish/subscribe, streaming, and peer-to-peer systems
* Serverless and Function-as-a-Service computing
* Data-intensive systems (big data)
* Cloud, fog, edge computing, and data centers
* Networking, network function virtualization, and software-defined networking
* Mobile and pervasive systems and services
* Emerging hardware technologies

**Middleware Design Principles and Programming Models**

* Programming abstractions and paradigms for middleware
* Reconfigurable, adaptable, and reflective middleware
* Critical reviews of middleware paradigms, e.g., object models, aspect orientation
* Methodologies and tools for middleware systems design, implementation, verification, and evaluation
* Monitoring, resource management, and analysis
* Virtualization, auto-scaling, provisioning, and scheduling
* Energy and power-aware techniques

The conference seeks original papers of five types:

**Research Papers:** These papers report original research on the above topics and will be evaluated on the significance of the problem, the novelty of the solution, advancement beyond prior work, sufficient supporting evidence, and clarity of the presentation.

**Short Papers:** These papers hold up to the same standards and evaluation criteria as full research papers, but their content is presented in a more compact format.

**Experimentation and Deployment Papers:** These papers describe complete systems, platforms, and/or comprehensive experimental evaluations of alternative designs and solutions to well-known problems. The emphasis during the review of these papers will be more on the demonstrated usefulness and potential impact of the contributions, the extensive experimentation involved, and the quality and weight of the lessons learned.

**Big Ideas Papers:** These are papers that have the potential to open up new research directions. For such papers, the potential to motivate new research is more important than full experimental evaluation, though some preliminary evidence of the effectiveness of the approach or idea is important. We will require senior researchers to present papers in this track for stronger dissemination and more lively discussion.

### Important Dates, Deadlines, Conditions

Middleware 2025 will have two submission deadlines, and we are providing the possibility of revision decisions for some papers that are deemed promising but somehow not yet complete. A more detailed explanation of the submission model is provided below.

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#### **First Round: Fall/Winter Deadlines:**

Full paper submissions due: **December 13, 2024**

Rebuttal: **February 26-28, 2025**

Notification to authors: **March 7, 2025**

Shepherded submissions due: **March 28, 2025**

Notifications of decisions of shepherded papers (Accept/Reject): **April 11, 2025**

Final paper files (camera-ready copy) due: **April 25, 2025**

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#### **Second Round: Spring/Summer Deadlines:**

Full paper submissions due: **May 30, 2025**

Rebuttal: **August 18-22, 2025**

Notification to authors: **September 5, 2025**

Shepherded submissions due: **September 26, 2025**

Notifications of decisions of shepherded papers (Accept/Reject): **October 10, 2025**

Final paper files (camera-ready copy) due: **October 24, 2025**

### Resubmission/Revision Guidelines

The papers submitted to Middleware receive one of the following decisions depending on the submission track: (1) **accept**, (2) **conditional accept** (shepherding), (3) **minor revision** (one-shot revision), (4) **major revision** (resubmissions to next cycle), or (5) **reject** (ineligible for resubmission up to a year).

Onlypapers in the research (including short) and experimentation/deployment track will be eligible for the minor revision decision. The research and experimentation/deployment track will be eligible for the major revision decision. Big ideas papers are not eligible for revision, but they may be shepherded before acceptance.

**1. Conditional Accept: Shepherding**

Any paper in any category may be accepted conditionally to complete a shepherding process. Such a decision will also be accompanied by a list of straightforward changes (expected to be reasonably addressed in a short amount of time). At least one PC member will check these changes before being accepted.

**2. Minor Revision: One-shot Revision**

A paper submitted in a given round may receive a one-shot revision decision. Such a paper may be revised, given the information in the reviews, and resubmitted as part of the next review round. Such a revision decision will include a summary of the paper’s merits and a list of necessary changes required for the paper to be accepted at Middleware. Authors may then choose to resubmit a revised version of their work by addressing those needs by the deadline for the next round. Upon resubmission, the paper will be re-reviewed to judge whether it addresses the requirements requested; this review will be conducted, to the extent possible, by the same reviewers as the original review. Additional reviewers can be added. Papers receiving a revision decision for the 2nd Round of review (Spring Submission) will be invited to be resubmitted to the 1st Round (Fall Submission) for the next edition of the conference.

**3. Major Revision: Resubmissions to Next Cycle**

A research and experimentation/deployment article rejected in the 1st Round (Fall Submission) can be resubmitted to the next cycle (Spring Submission) **if explicitly allowed by the final decision of the program committee**. Similarly, a research article rejected in the 2nd Round (Spring Submission) can be resubmitted to the next cycle (Fall Submission 2025) if explicitly allowed by the final decision of the program committee. Authors, at submission time, will have to prove they have taken into account the provided reviews and made a reasonable effort to convey the efforts taken to improve their submission. Such resubmission will count as a new submission. In such scenarios, the reviews can be forwarded from one cycle to the next one and, as much as possible, to the same set of reviews.

**4. Rejected papers cannot be submitted to Middleware until a full year has passed.**

### Submission Guidelines

Your submission for the specific rounds must be made by the due date specified above. Regular papers must have at most 12 pages of technical content, including text, figures, and appendices, but excluding any number of additional pages for bibliographic references. Short papers must not be longer than 6 pages of technical content, including text, figures, and appendices, but excluding any additional pages for bibliographic references. Note that submissions must be doubly anonymous - authors’ names must not appear on the manuscript, and authors must make a good-faith attempt to anonymize their submissions. Submitted papers must adhere to the formatting instructions of the ACM SIGPLAN style, which can be found on the [ACM template page](https://www.acm.org/publications/proceedings-template). The font size has to be set to 10pt.  
Please submit papers to <https://middleware2025r1.hotcrp.com/> (Round 1) and <https://middleware2025r2.hotcrp.com/> (Round 2).

A paper submitted to ACM Middleware 2025 cannot be under review for any other conference or journal during the entire time it is considered for Middleware 2025, and it must be substantially different from any previously published work. All accepted papers will appear in the proceedings. ACM reserves the right to exclude a paper from distribution after the conference (e.g., removal from ACM Digital Library) if none of the authors attends the conference to present their paper.

The Middleware 2025 conference proceedings will be published in the ACM Digital Library. The official publication date will be when the proceedings are made available in the ACM Digital Library. Note that the official publication date may affect the deadline for any patent filings related to published work. A list of papers accepted from the 1st Round review process (Fall submission) will be posted on the ACM Middleware 2025 website in May 2025. In October, when the full program is available, paper titles and abstracts will be posted for all accepted papers from the spring and fall deadlines.

**Note to Authors:** By submitting your article for distribution in this Special Interest Group publication, you now grant ACM the following non-exclusive, perpetual, worldwide rights:

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Please ensure that you and your co-authors obtain an [ORCID ID](https://middleware-conf.github.io/%E2%80%9D), so you can complete the publishing process> for your accepted paper. ACM has been involved in ORCID from the start, and we have recently made a commitment to collect ORCID IDs from all of our published authors ([https://authors.acm.org/author-resources/orcid-faqs](https://middleware-conf.github.io/%E2%80%9Dhttps://authors.acm.org/author-resources/orcid-faqs%E2%80%9D)). The collection process has started and will roll out as a requirement throughout 2022. We are committed to improving author discoverability, ensuring proper attribution, and contributing to ongoing community efforts around name normalization; your ORCID ID will help in these efforts.

### Anonymity Requirements for Double-Anonymous Reviewing

Every research paper submitted to ACM Middleware 2025 will undergo a ''doubly-anonymous'' reviewing process: in addition to maintaining the anonymity of the reviewers of the papers, the PC members and reviewers will not know the identity of the authors. To ensure the anonymity of authorship, authors must at least do the following:

Authors' names and affiliations must not appear on the title page or elsewhere in the paper.

Funding sources must not be acknowledged anywhere in the paper under review; these can be added to accepted papers upon submission of the camera-ready manuscript. Non-anonymized links to the authors’ online content must be removed. Research group members or other colleagues or collaborators must not be acknowledged anywhere in the paper. The paper’s file name must not identify the authors of the paper.

Authors should also use care when referring to related past work. The solution is to reference past work in the third person (in the same way that one would reference work by anyone else). This allows you to set the context for your submission while at the same time preserving anonymity.

Despite the anonymity requirements, authors should still include all relevant work, including their own; omitting them could reveal the author's identity by negation. However, self-references should be limited to the essential ones, and extended versions of the submitted paper (e.g., technical reports or URLs for downloadable versions) must not be referenced. The goal is to preserve anonymity while allowing the reader to grasp the context of the submitted paper fully. It is the responsibility of authors to do their very best to preserve anonymity. Papers that do not follow the guidelines or potentially reveal the author's identity are subject to immediate rejection.

### Software and Data Artifact Availability for Accepted Papers

The authors of accepted papers will be invited to submit supporting materials made publicly available as "source materials" in the ACM Digital Library. The materials will be vetted by the Artifact Availability Evaluation process, which is run by a separate committee. This submission is voluntary but encouraged and will not influence the final decision regarding the papers. Papers that go through the Artifact Availability Evaluation process successfully and are made available in the ACM Digital Library will receive a badge printed on the papers themselves.

### [New] Presentation Requirements

As a community, it is crucial to pay special attention to the quality of the presentation, which is an integral part of the conference experience and the spread of knowledge. Therefore, as mentors and mentees, we must commit to ensuring presentations are engaging and the speaker connects with the audience, for example, making eye contact as a basic technique. There needs to be a genuine attempt to engage and promote the scientific work. **At the ACM Middleware conference, we expect presentations of the highest quality**, and as such, reading off from the scripts without connecting with the audience is highly discouraged, which will deteriorate the quality of the conference and, eventually, our community.

As a community, we are responsible for educating the new members of our growing community. To this end, **we will require all student authors (open to everyone) to attend a session on the art of effective presentation techniques** at the beginning of the conference and/or the Doctoral Symposium. For the big idea track, we will require senior researchers (with doctoral degrees) to present their accepted papers.

Further, **ACM reserves the right to exclude a paper from proceeding** and distribution (e.g., remove it from the ACM Digital Library) after the conference if none of the authors attend to present their paper.