
CALL FOR PAPERS

12th Workshop on Adaptive and Reflective Middleware (ARM 2013)

held in conjunction with ACM/IFIP/USENIX ACM International Middleware Conference, Beijing, China, 9-13

December, 2013

<http://tinyurl.com/arm-mw-2013>

IMPORTANT DATES (GMT/UTC-12)

August 23, 2013 - Paper Submission

September 30, 2013 - Notification of Acceptance

October 11, 2013 - Camera-ready paper due

Workshop Scope

The 12th Workshop on Adaptive and Reflective Middleware (ARM 2013) follows on the success of a decade of previous editions exploring how reflective approaches can be combined with complementary perspectives to support the complete life-cycle of highly adaptive middleware platforms. It provides researchers with a forum to address the need of currently available middleware systems to support various levels of flexibility in order to adapt and tailor their behavior and properties to the increasing dynamism and scale of new models of computation and new classes of applications (such as networked and cloud applications, cyber-physical systems and many others).

Applying reflective techniques to middleware, and related software platforms for interoperability, one-to-many deployment, and adaptability, in order to "open up" their implementation, was explored in the previous workshops in this series [1–11] and proved particularly successful and influential. Reflection by itself is today considered a baseline, yet it is insufficient to deliver the flexibility demanded by today's ever diversifying middleware environments, requiring higher and higher degrees of adaptability and resilience. The 12th Workshop on Adaptive and Reflective Middleware aims to follow on the success of previous editions by providing researchers with a forum to address this technological gap and explore how reflective approaches can be combined with complementary perspectives to support the complete life-cycle of highly adaptive middleware platforms.

ARM2013 aims at providing researchers with a leading edge view on the state of the art in reflective and adaptive middleware, and on the challenging problems that remain unsolved. The goal is to gather active researchers in this important field, so as to gain insight on their experiences and the new approaches being proposed. This edition follows the path initiated in the 2006 edition, by bringing together a wider group of researchers that are involved in designing and reusing adaptive systems at different system layers, including architectural, OS, virtualization technology, and network layers, as well as using different techniques that are complementary to reflection. The workshop will provide an exciting environment in which to leverage cooperation among researchers, contributing to the development of middleware technology.

Topics of interest include but are not limited to:

- Design and performance of adaptive and/or reflective middleware platforms;
- Experiences with adaptive and reflective technologies in specific domains (e.g., sensor networks, ubiquitous/pervasive computing, mobile computing, cloud/grid computing, P2P, Systems-of-Systems, etc.);
- Cross-layer interactions and adaptation mechanisms including network, OS, VM & device level techniques;
- Adaptation and reflection in heterogeneous execution paradigms (e.g., P2P networks, network-centric computing);
- Application of adaptive and reflective middleware techniques to achieve: reconfigurability and/or adaptability and/or separation of concerns; reuse and reification of adaptation techniques and strategies;
- Incorporating non-functional properties into middleware: realtime, fault-tolerance, security, trust, privacy;
- Fundamental developments in the theory and practice of reflection, adaptation and control, as it relates to middleware and its interaction with other layers;
- Techniques to improve performance and/or scalability of adaptive and reflective techniques;
- Evaluation methodologies for adaptive and reflective middleware; guidelines, testbeds and benchmarks;
- Approaches to maintain the integrity of adaptive and reflective technologies; convergence of adaptation.
- Tool support for adaptive and reflective middleware;
- Design and programming abstractions to manage the complexity of adaptive and reflective mechanisms;
- Software engineering methodologies for the design and development of adaptive middleware;
- Methods for reasoning and storing knowledge about services provided by adaptive/reflective middleware;
- The role of techniques such as learning in the design of long-lived adaptive middleware;
- Methods for asynchronous, distributed control, coordination/cooperation among components providing middleware services.
- Metrics on properties such as cost-of-adaptation, quality-of-adaptation, consistency-of-adaptation, yields

Workshop Chairs

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Program Committee – TBA

Submission and Publication

Research papers should not exceed 6 pages of text on letter paper in ACM format. Content should be work that is not previously published or concurrently submitted elsewhere. Poster and demo submissions should submit a 2 pages abstract in ACM format; this offers the opportunity to present and receive feedback at the workshop about work still in its early stages; we are particularly interested in reports on adaptive middleware tools and solutions.

Accepted papers will appear in a Middleware 2013 companion proceedings including all workshop papers, which will be available in the ACM Digital Library. At least one of the authors will have to register for the workshop and present the paper.

This workshop has its own ISBN and will be included in the ACM digital library. Extended versions of the best workshop papers will be invited to be published in a special issue of the Journal of Internet Services and Applications (Springer), with Fabio Kon and Gordon Blair as editors-in-chief.

Submissions are done through EasyChair. More details to be announced soon.

References

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3. MW 2004. The 3rd Workshop on Reflective Middleware (RM'04). <http://www.txcorp.com/~nanbor/RM2004>
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5. MW 2006. The 5th Workshop on Adaptive and Reflective Middleware (ARM'06). <http://www.ics.uci.edu/~arm06>
6. MW 2007. The 6th Workshop on Adaptive and Reflective Middleware (ARM'07). <http://www.ics.uci.edu/~arm>
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8. MW 2009. The 8th Workshop on Adaptive and Reflective Middleware (ARM'09). <http://middleware2009.cs.uiuc.edu>
9. MW 2010. The 9th Workshop on Adaptive and Reflective Middleware (ARM'10). <http://www.ics.uci.edu/~arm2010>
10. MW 2011. The 10th Workshop on Adaptive and Reflective Middleware (ARM'11). [http:// arm11.lifl.fr/](http://arm11.lifl.fr/)
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