
CALL FOR PAPERS, DEMOS and POSTERS

13th Workshop on Adaptive and Reflective Middleware (ARM 2014)

held in conjunction with ACM/IFIP/USENIX ACM International Middleware Conference
Bordeaux, France, 8-12 December, 2014

<http://site.uit.no/arm2014/>

IMPORTANT DATES (GMT/UTC-12)

September 13, 2014 – Paper Submission (extended!)

October 6, 2014 – Notification of Acceptance

October 14, 2014 – Camera-ready paper due

The 13th Workshop on Adaptive and Reflective Middleware (ARM 2014) follows on the success of over 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, the Internet of Things and many others). Applying reflective techniques to “open-up” the implementation of middleware and related software platforms for interoperability, one-to-many deployment, and adaptability proved particularly successful and influential. Reflection by itself is today considered a baseline, yet its combination with other software adaptation techniques has proven beneficial to extend the reach to different layers of the software stack, opening the path to deliver the flexibility demanded by today’s ever diversifying middleware environments, which require higher and higher degrees of adaptability and resilience.

ARM2014 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 the presence of heterogeneous execution and programming paradigms;
- 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: real-time, fault-tolerance, security, trust, privacy and so on;
- 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 mechanisms;
- 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, storing and dynamically updating knowledge about the 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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SUBMISSION AND PUBLICATION

ARM2014 will receive three kinds of submissions: research papers, posters and demos. Research papers should not exceed 6 pages. Content should be work that is not previously published or concurrently submitted elsewhere. Poster and demo submissions should be in the form of a 2-page abstract; 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. All submissions should be in PDF and should follow the ACM format, Option 2 (<http://www.acm.org/sigs/publications/proceedings-templates>).

All accepted papers will appear in a Middleware 2014 companion proceedings, 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.

Extended versions of the best workshop papers will be invited for publication in a special issue of the Journal of Internet Services and Applications (Springer).

Submissions should be done through EasyChair at the following URL:
<https://www.easychair.org/conferences/?conf=arm2014>