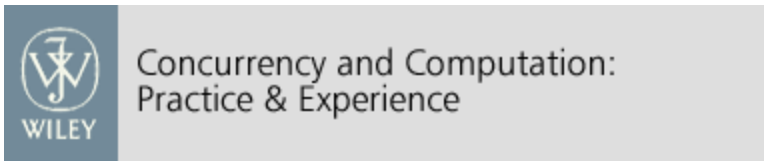

Special Issue on
Autonomic Cloud Computing: Technologies, Services, and Applications

Concurrency and Computation: Practice & Experience
Editor-in-Chief: Geoffrey Fox

***** Call for Papers *****

Cloud computing delivers infrastructure, platform, and software (application) as services, which are made available as subscription-based services in a pay-as-you-go model to consumers. These services are respectively referred to in industry as Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS). Clouds aim to power the next generation data centers by architecting them as a network of virtual services (hardware, database, user-interface, application logic) so that users are able to deploy and access applications globally and on demand at competitive costs depending on users QoS (Quality of Service) requirements. Developers with innovative ideas for new Internet services no longer require large capital outlays in hardware to deploy their service, or human expense to operate it. It offers significant benefit to IT companies by freeing them from the low level task of setting up basic hardware (servers) and software infrastructures, and thus enabling more focus on innovation and creating business value for their services.

Emerging Cloud computing applications such as application level Internet services (e.g. Salesforce.com, Animoto.com), social networking, e-Research, and e-Business are inherently large and complex. Furthermore, the infrastructure hosting cloud services are similarly large and complex, with heterogeneous resource types that may exhibit highly dynamic resource conditions in terms of their availability, load, power efficiency, and heat profiles.

With ever increasing system scale, operational costs, and energy requirements; maximizing overall utility in terms of cost-effectiveness, and utilization is mandatory. Furthermore, coupled with the complexity, heterogeneity, uncertainty, dynamism, and criticality of applications hosted within clouds, there is a requirement for designing and developing of methodologies that adapt to changing states and behaviors of the Cloud computing environments in accordance with high-level guidance specified by system administrators. Self-Managing or Autonomic techniques are inspired by biological systems that deal with similar challenges of complexity, dynamism, heterogeneity, and uncertainty, and provide a promising approach for addressing this requirement. The primary objective of this special issue is to capture the state-of-the-art in design and development of Autonomic Cloud Computing technologies, applications, and services. Papers that focus on end-to-end autonomic cloud system/application behaviors are of particular interest to this special issue.

Topics
Areas of interest for this special issue include the following:

- Programming models and systems for autonomic cloud applications
- Adaptive pricing models for IaaS, PaaS and SaaS
- Virtual machines provisioning and migration services
- Cloud economics and business models
- Reliability and robustness models for applications and services running on the cloud

- Utility-oriented scheduling and allocation in clouds
- Power-aware resource management in clouds
- Application scale-up and scale-out and federation of clouds
- QoS negotiation and Service-Level Agreements (SLAs) management
- Internetworking between clouds (InterClouds)
- Portability of applications and data between different cloud providers
- Dynamic monitoring and management of cloud applications
- Autonomic content delivery networks using storage clouds
- Application of biologically/socially inspired approaches to clouds
- Experiences with autonomic cloud systems and applications

Instructions for Special Issue on Autonomic Cloud Computing (SIACC)

- The editors of the special issue are Rajkumar Buyya, Manish Parashar, and Rajiv Ranjan.
- Please submit a paper to Manuscript Central as SIACC special issue by December 10th, 2009
- Notification of Acceptance and Reviewer comments will be given by Feb 10, 2010.
- Final Papers are due March 10, 2010.
- Accepted papers are expected to appear in 2nd Quarter, 2010 (Tentative).
- The submitted papers must have at least 30% difference from the conference original papers.
- There is a 20 page length limit (12 point single space inclusive of figures and tables).
- Wiley has Latex templates but no special templates for Word; most papers are submitted in Word. Either Latex OR Word accepted.

Selection and Evaluation Criteria

- Significance to the readership of the journal
- Relevance to the special issue
- Originality of idea, technical contribution, and significance of the presented results
- Quality, clarity, and readability of the written text
- Quality of references and related work
- Quality of research hypothesis, assertions, and conclusion

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