

## Accepted Manuscript

Topics in cloud incident management

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PII: S0167-739X(16)30517-9

DOI: <http://dx.doi.org/10.1016/j.future.2016.11.003>

Reference: FUTURE 3208

To appear in: *Future Generation Computer Systems*



Please cite this article as: T.-F. Fortiș, V.I. Munteanu, Topics in cloud incident management, *Future Generation Computer Systems* (2016), <http://dx.doi.org/10.1016/j.future.2016.11.003>

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Topics in cloud incident management<sup>☆</sup>Teodor-Florin Fortiș<sup>a,b,\*</sup>, Victor Ion Munteanu<sup>b</sup><sup>a</sup>West University of Timișoara, bvd. V. Pârvan 4, 300223, Romania<sup>b</sup>Institute e-Austria Timișoara, bvd. V. Pârvan 4, 300223, Timișoara, Romania**Abstract**

Continuous advancement of cloud technologies, alongside their ever increasing stability, adoption, and ease of use, has led to a rise in native cloud applications, possibly over a larger pool of heterogeneous resources or in multi-cloud approaches. This, in turn, brought unprecedented levels of complexity in the context of cloud computing. Such complexity may cause a series of events and incidents that are difficult to be intercepted or managed on time, in a manner that also ensures the overall Quality of Services and existing Service-Level Agreements.

Our special issue presents advances in several key areas that are highly relevant for automated cloud incident management: a ‘continuous approach’ for reliable cloud native applications, novel approaches for Metal-as-a-Service, centered around an advanced reservation system, or development of a framework based on the concept of secure SLA, in order to deal with specific cloud security issues.

*Keywords:* Cloud incident management, Cloud computing, Autonomic systems, Autonomic computing, Service Level Agreements

**1. Introduction**

As core cloud technologies are reaching their maturity, new means for the delivery, production and consumption of resources are needed in order to enrich the pool of available cloud-enabled applications. This quest for novel technologies is currently supported by the convergence with the Internet of Things (IoT), and the development of alternative hybrid approaches in the cloud such as fog and edge computing [1, 2]. On the other hand, once a new generation of resources are made available for cloud deployments (*e.g.*, multi-integrated cores, GPGPU clusters, data flow engines, FPGA, and many others), there is a growing interest for cloud infrastructures for supporting increasingly complex

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