# Accepted Manuscript

MemEFS: A network-aware elastic in-memory runtime distributed file system

Alexandru Uta, Ove Danner, Cas van der Weegen, Ana-Maria Oprescu, Andreea Sandu, Stefania Costache, Thilo Kielmann

PII: S0167-739X(17)30378-3
DOI: http://dx.doi.org/10.1016/j.future.2017.03.017
Reference: FUTURE 3385

To appear in: *Future Generation Computer Systems*

Received date: 29 February 2016
Revised date: 26 February 2017
Accepted date: 9 March 2017

Please cite this article as: A. Uta, O. Danner, C.v.d. Weegen, A.-M. Oprescu, A. Sandu, S. Costache, T. Kielmann, MemEFS: A network-aware elastic in-memory runtime distributed file system, *Future Generation Computer Systems* (2017), http://dx.doi.org/10.1016/j.future.2017.03.017

***Highlights (for review)**

- We revisit the design of MemEFS with a focus on elasticity and network-adaptability.
- While an elastic approach improves compute resource utilization, the network adaptivity improves bandwidth utilization.
- Our improved design outperforms the static and network-agnostic approaches on both micro-benchmarks and real-world applications.
- Evaluation shows that our approach is applicable on both clusters, and clouds.