

## Accepted Manuscript

Robust orchestration of concurrent application workflows in mobile device clouds

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PII: S0743-7315(18)30335-6  
DOI: <https://doi.org/10.1016/j.jpdc.2018.05.004>  
Reference: YJPDC 3884

To appear in: *J. Parallel Distrib. Comput.*

Received date: 8 March 2017  
Revised date: 21 April 2018  
Accepted date: 8 May 2018

Please cite this article as: P. Pandey, H. Viswanathan, D. Pompili, Robust orchestration of concurrent application workflows in mobile device clouds, *J. Parallel Distrib. Comput.* (2018), <https://doi.org/10.1016/j.jpdc.2018.05.004>

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## Highlights:

- A hybrid mobile/fixed device cloud, Maestro that harnesses sensing, computing, communication, and storage capabilities of devices in the field as well as those of in remote datacenters is proposed.
- The key components of Maestro are (i) a task scheduling mechanism that employs controlled task replication in addition to task reallocation for robustness and (ii) Dedup for task deduplication among concurrent pervasive workflows.
- An architecture-based solution that relies on task categorization and authorized access to the categories of tasks is proposed for different levels of trust.
- Experimental evaluation through prototype testbed of Android- and Linux-based mobile devices as well as simulations is performed to demonstrate Maestro's capabilities.

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