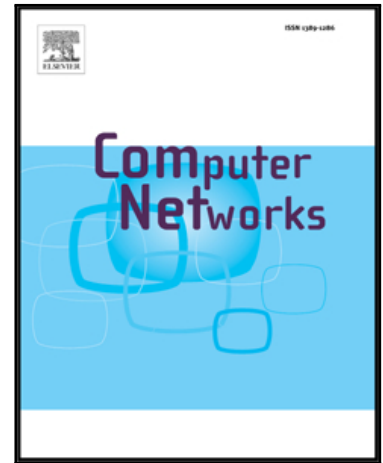


Accepted Manuscript

Publish-subscribe in mobile information centric networks: modeling and performance evaluation

Agnese V. Ventrella, Giuseppe Piro, L. Alfredo Grieco

PII: S1389-1286(17)30337-7
DOI: [10.1016/j.comnet.2017.08.022](https://doi.org/10.1016/j.comnet.2017.08.022)
Reference: COMPNW 6295



To appear in: *Computer Networks*

Received date: 5 April 2017
Revised date: 15 July 2017
Accepted date: 29 August 2017

Please cite this article as: Agnese V. Ventrella, Giuseppe Piro, L. Alfredo Grieco, Publish-subscribe in mobile information centric networks: modeling and performance evaluation, *Computer Networks* (2017), doi: [10.1016/j.comnet.2017.08.022](https://doi.org/10.1016/j.comnet.2017.08.022)

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Publish-subscribe in mobile information centric networks: modeling and performance evaluation

Agnese V. Ventrella, Giuseppe Piro, L. Alfredo Grieco

*Dep. of Electrical and Information Engineering (DEI), Politecnico di Bari, v. Orabona 4, 70125, Bari, Italy; e-mail: {name.surname}@poliba.it.
CNIT, Consorzio Nazionale Interuniversitario per le Telecomunicazioni*

Abstract

Emerging Internet of Things (IoT) services require efficient content dissemination mechanisms based on the publish-subscribe model in static and mobile scenarios. The Information-Centric Networking (ICN) architecture can successfully satisfy these requirements. In its native formulation, ICN can fulfill publish-subscribe data dissemination and natively supports mobile applications. At the time of this writing, several ICN-based solutions have been proposed to implement the publish-subscribe model, but none of them is explicitly tailored to mobile scenarios. To bridge this gap, the present contribution: (i) formulates new pull-based and push-based publish-subscribe communication schema, able to support user mobility in ICN networks; (ii) provides analytical models describing the communication overhead they incur, (iii) investigates their accuracy through computer simulations. The conducted study considers well-known benchmark network topologies, real IoT monitoring services, and standardized settings for urban and rural environments. From one side, obtained results validate the conceived analytical models. From another side, they highlight pros and cons of pull-based and push-based approaches by emphasizing the conditions under which one scheme should be preferred to the other one.

Keywords: Internet of Things, Information-Centric Networking, publish-subscribe, analytical models, computer simulations

1. Introduction

Latest reports from key stakeholders of the telecommunication market forecast that up to 100 billion of connected things are expected to join the

Download English Version:

<https://daneshyari.com/en/article/4954621>

Download Persian Version:

<https://daneshyari.com/article/4954621>

[Daneshyari.com](https://daneshyari.com)