

# A Diagnostic Tool for Ad-Hoc and Delay-Tolerant Networks

Edoardo Biagioni

<http://www.alnt.org/>

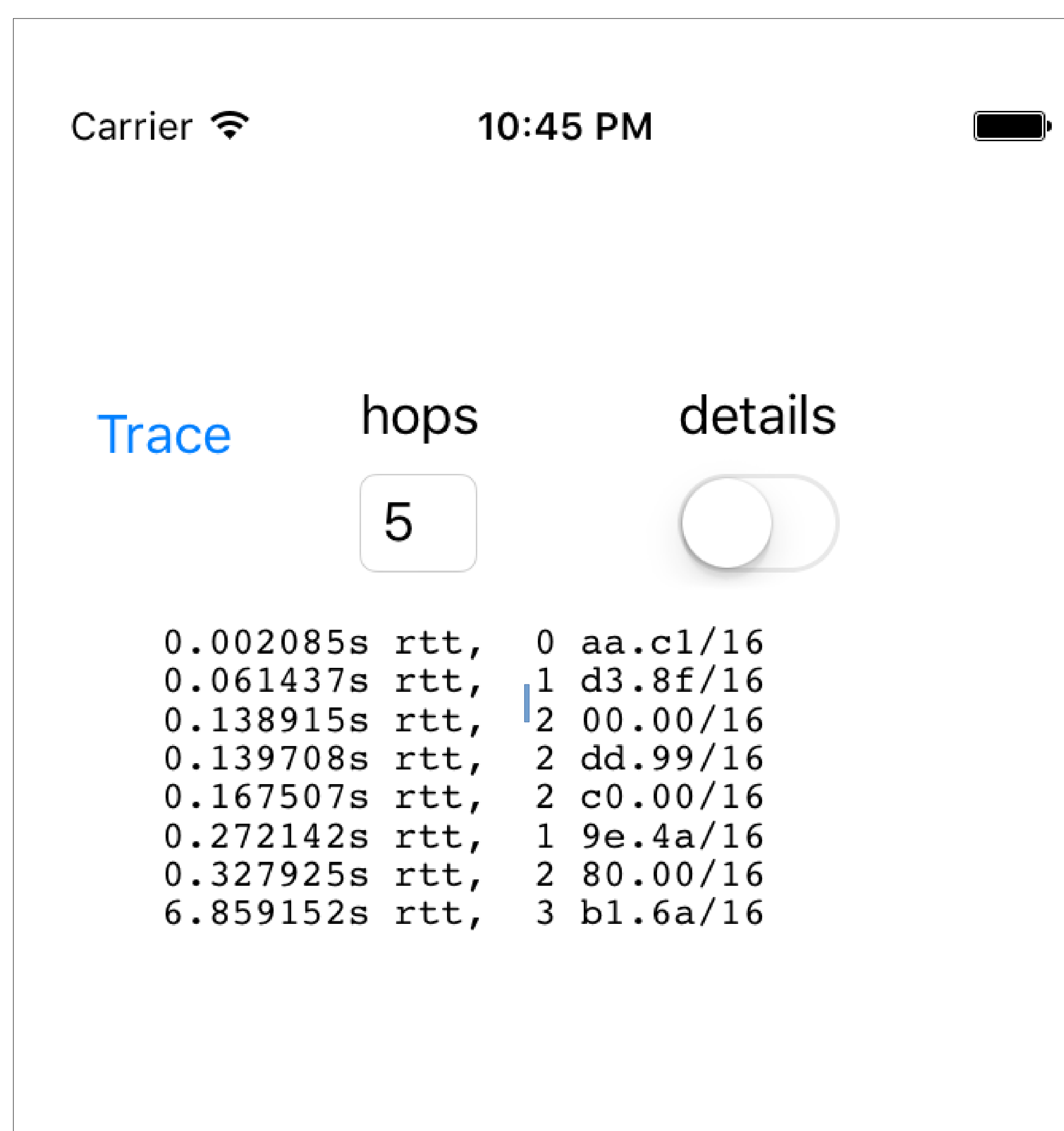
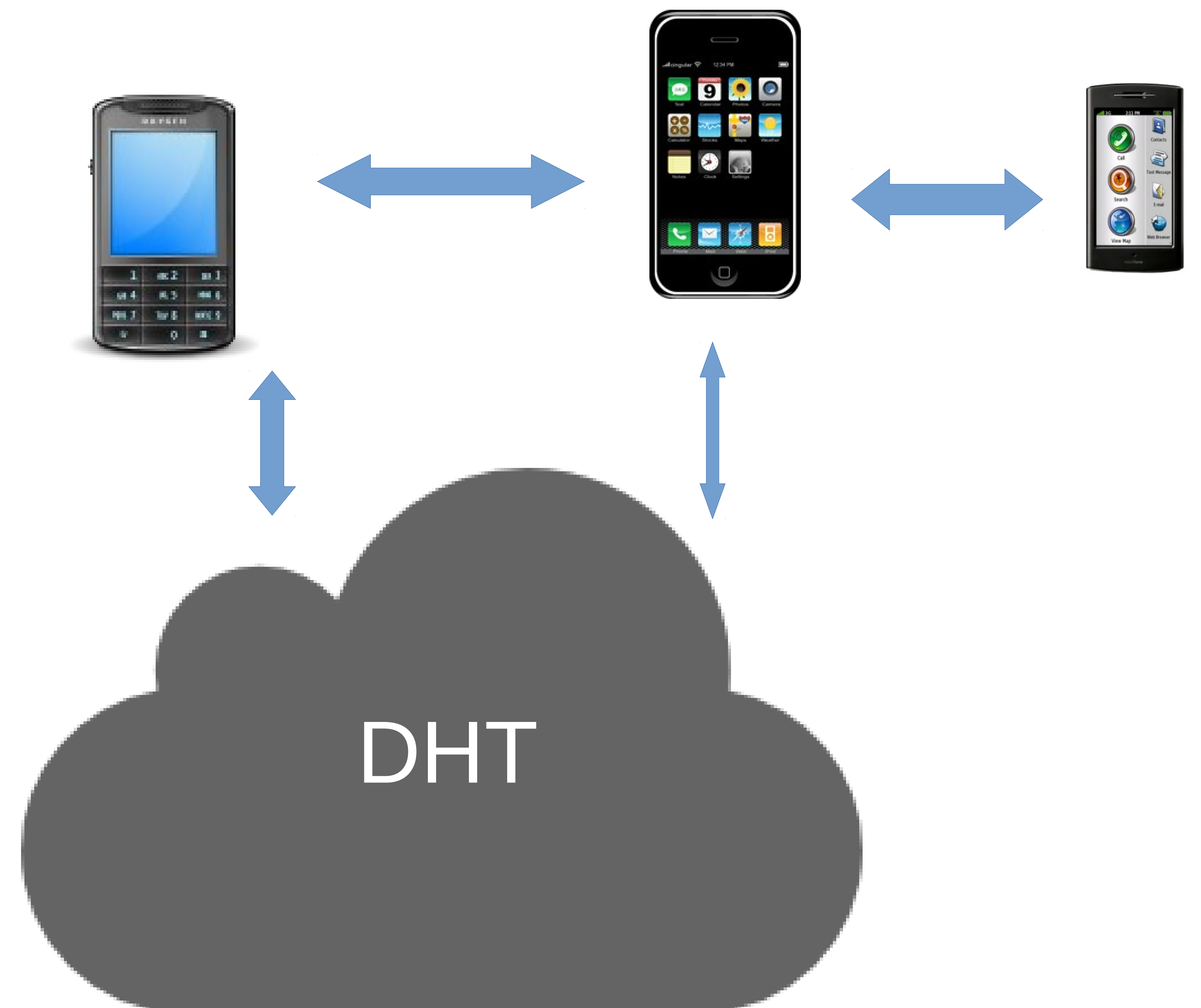
esb@hawaii.edu

University of Hawaii at Mānoa  
Information and Computer Sciences  
AllNet project

## 1. Allnet: Ad-Hoc + Delay Tolerant + the Internet

Challenge: debug a real ad-hoc network

- limited broadcast
- sometimes long delays
- data in a Distributed Hash Table is duplicated for redundancy



Principles of AllNet Trace:

- each Trace packet is self-contained
- packet ID to match requests to replies
- packets optionally record the route they traverse
- packets may be broadcast (0-bit address) or more specific (1- to 64-bit address)
- it's normal to get multiple responses
- addresses: random or self-selected
- trace has least priority, cannot DoS
- listen as long as desired

new broadcast networks need new diagnostic tools:

- designed for multiple responses
- tolerates high delays
- supported by the protocol (just like ping and traceroute)
- cannot be used for Denial of Service attacks