

LUNARng

The next generation

Lightweight Underlay Network Ad hoc Routing

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Abstract

This demonstration presents LUNARng, an underlay protocol for MANETs that provides IPv4 and IPv6 routing, name resolution, address autoconfiguration, Internet gatewaying, a node identification mechanism, and a network directory service. The particularity of LUNARng is that it integrates several existing network protocols at layer 2.5, i.e. below IP, in order to optimize network operations for multi-hop wireless ad hoc networks. LUNARng is an easy-to-use and fully functional protocol for MANETs which aims at contributing to the wide adoption of ad hoc networking by common people.

In practise, LUNARng is implemented as a Linux kernel module that can be dynamically loaded on a running system. This module presents itself to the system as a virtual network interface which presents the MANET as a classical subnet LAN. The installation of LUNARng is very simple, since the only requirement is to load the kernel module, and to run a DHCP client on the virtual interface. As a result of the underlay scheme, classic Internet applications (e.g. DNS, DHCP) as well as operating systems settings and libraries do not have to be modified in order to fit to the multi-hop decentralized nature of MANETs. Moreover, built-in features such as name based routing and users discovery allow non-specialized users to easily deploy an ad hoc network based on LUNARng.

More details ?

During this demonstration, I will highlight the many features of LUNAR, and I will show how simple it is to install and use LUNAR in order to setup a ready-to-use MANET. People willing to try LUNAR will be invited to join (assuming one has a laptop with Linux).

Links

<http://cn.cs.unibas.ch/> (Computer Networks Research Group, University of Basel)

<http://core.it.uu.se/adhoc/> (Download LUNAR !)