# Monash HMIPv6 Implementation Report

Greg Daley
Monash University CTIE
and
Australian Telecommunications Co-operative Research Centre
greg.daley@eng.monash.edu.au

July 12, 2003

# Implementation Basis

- Linux Kernel Based Implementation based on HUT MIPL 0.9.4 (MIPv6-15)
  - `http://www.mipl.mediapoli.com/`
- HMIPv6 MAP and MN (kernel) implementations
- RADVD (0.7.2) modifications for MAP Advertisement.
  - `http://v6web.litech.org/radvd/`
- Code is frozen awaiting GPL release of this version.
- Upgrade to Draft 19+ MIPL planned (0.9.5.1)

# HMIPv6 Support

- The current version implements Basic Mode of HMIPv6 draft 6
- Allows arbitrary MAP coverage topologies (overlap)
- Supports P,I (source address selection) Bits
- No Reverse-tunneling provided
- No security functions (no IPSec)
- Make-before-break on inter-MAP handover
- Awaiting upgrade to latest MIPL for new packet formats (MH, RH2).

# MAP Discovery

- Modifications to RADVD support static and dynamic MAP discovery.
- Multiple MAP options included in packets.
- Per-hop MAP option propagation is like RIP routing.
- Dynamic selection of per-interface propagation/learning.
- No Router-Renumbering based MAP propagation.

# Traps for unwary players

- Watch out for HA,CN rebinding timers
  - Bindings have maximum duration less than remaining LBU lifetime
- DAD timer = BU Timeout on inter-MAP movement
- Going home while under MAP cover?
- Inter domain handover with packet-filtering?
- Kernel space implementation for MAP unnecessary

# Next Steps for Monash HMIPv6

- Get up to date with MIPv6
- Upgrade packet formats to draft 8 (before IETF 58?)
- Interoperability testing with MIPv6 HA, CNs (?)
- Handover Prediction integration
- Binding Security waits for Linux Kernel upgrade (2.5)