IETF 120 Updates:

draft-ietf-pim-zeroconf-mcast-addr-alloc-ps

draft-ietf-pim-ipv6-zeroconf-assignment

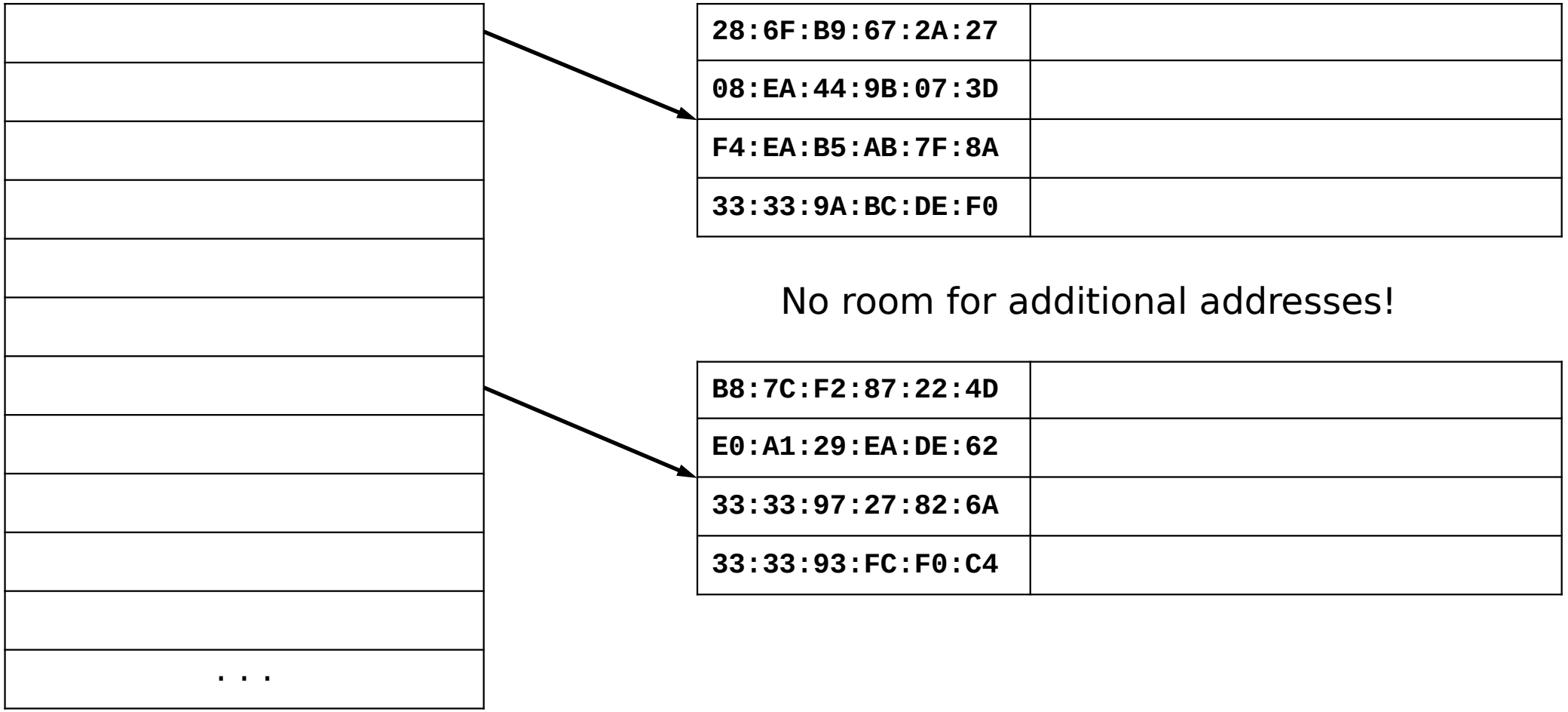
Nate Karstens
Dino Farinacci
Mike McBride

Working Group: pim

Proof-of-Concept

- https://github.com/nkarstens/mdns-zeroconf-mcast
- More extensive proof-of-concept with application data

Switch Address Table Collisions (US6690667B1)



Zeroconf Algorithm (1/2)

- Uses a unique PTR record for layer 2 address:
  33:33:9A:BC:DE:F0 =>
  0.f.e.d.c.b.a.9.3.3.3.3.eth-addr.arpa
- The application uses the mDNS probing algorithm described in RFC6762 section 8.1 to continuously query for a PTR record with the generated string for the name.
- If the probing algorithm completes without any conflict, then the application begins advertising its own PTR record using that name.

Zeroconf Algorithm (2/2)

- The PTRDNAME field is the concatenation of an application identifier and the device's host name, in the form of a DNS label.
  - Example PTRDNAME: “application.example.local.”
- The application should retain the group ID value in long-term storage and use it the next time the multicast stream is transmitted.
  - Conflicts should not be repeated each power cycle.

Veto Record

- Unique PTR record with same generated string as the address
  - Published without probing
  - Forces a conflict
- PTRDNAME is the string “veto”
- Applications respond the same as a collision and allocate a new ID
- Applications retain new ID, so the same conflict is not repeated

- mdns-zeroconf-mcast proof-of-concept updated

Thank You!