

# draft-ietf-pim-multicast-lessons-learned-04

Dino, Lenny, Mike, Nils  
Vancouver 120

# Current protocols/topics addressed

## 3. Lessons learned about IP Multicast over the last 30 years

3.1. DVMRP

3.2. MOSPF

3.3. Shared vs Source Trees

3.4. IGMP

3.5. Data Driven State Creation and RPF

3.6. MSDP

3.7. MPLS MVPNs

3.8. SD and SDR

3.9. All or Nothing Problem

3.10. AMT and TreeDN

3.11. Network Based Source Discovery

**3.12. Dynamic Multicast Group Address Allocation**

3.13. Premature Optimization

3.14. Kernel vs User Space

3.15. 802.11

# New

## 3.12. Dynamic Multicast Group Address Allocation

Approaches to multicast group allocation have been proposed in the past including mDNS [RFC6762], MADCAP [RFC2730], MASC [RFC2909], along with the related IPv6 Allocation Guidelines [RFC3307]. The problems are that they require manual configuration, are used on a single subnet, are not decentralized and have problems associated with address collisions. MADCAP, for instance, is used to dynamically assign addresses but its reliance on a dedicated server

# New Con't

Two solutions have recently emerged to improve upon the limitations of these previous solutions. One is **Zeroconf Multicast Address Allocation Protocol [I-D.ietf-pim-ipv6-zeroconf-assignment]** and the other is **Group Address Allocation Protocol (GAAP) [I-D.ietf-pim-gaap]**. Zeroconf works on any ipv4/v6 network (although the initial effort has focused on IPv6 marine networks). It delivers zero configuration, is decentralized and provides active collision detection by using a random number and saving state between power cycles. Applications randomly assign multicast group IDs from a reserved range and prevent collisions by using mDNS to publish records in a new "eth-addr.arpa" special-use domain. GAAP also works on any IPv4/v6 network, is zero configuration, decentralized, and provides active collision detection using a hashing algorithm. Instead of extended an existing protocol, as with Zeroconf, GAAP is a new lightweight protocol having a well-known UDP port number for the GAAP protocol. It allocates one v4 and one v6 multicast address that GAAP uses for messaging and allocates a multicast address block for GAAP allocated group addresses.

# Next steps

- We were only focusing on major issues/lessons learned and didn't plan to include all protocols. But wg feedback was to include everything.
- Will continue to make steady progress, feedback appreciated.
- Thanks to Hitoshi for suggesting this most recent addition.
- What else?