

# Multicast versus WiFi

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draft-mcbride-mboned-wifi-mcast-problem-statement-01

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# Why mboned?

mboned is chartered to

- receive regular reports on the current state of the deployment of multicast technology
- create "practice and experience" documents that capture the experience of those who have deployed and are deploying various multicast technologies
- provide feedback to other relevant working groups

# Issues

- Low Bandwidth
  - Constrained by slowest local recipient
- Increased congestion
  - Due to longer occupancy of the physical medium
  - Also the need for higher power
  - Potentially hundreds of times as much interference
- Poor reliability
  - 802.11 products are optimized for unicast
  - Delivery is not acknowledged at layer 2
- IPv6 neighbor discovery easily saturates the wifi link
- Apps, like Bonjour, saturate with service discovery

**These problems will not be fixed anytime soon**

# Workarounds

- Conversion to serial unicast
- Provide an L2 ack for mcast
- Wifi traffic classes may help
- A reliable registration to L2 multicast groups and a reliable multicast operation at L2 could provide a generic solution.
- There is work being developed to help save battery life such as the devices not waking up when receiving a multicast packet.

# Comments from List/Meeting

- We need to determine what problems should be solved by the IETF and what problems should be solved by the IEEE.
- IETF may decide that broadcast is more expensive so multicast needs to be sent wired.
- Add a class of service specification to multicast packets that indicates their sensitivity to loss.
- Multicast to unicast conversion is non-standard.
- The IETF has to decide if it wants to design IP over 802.11
- Determine performance requirements for L2 multicast
  - Multicast packets should be delivered with less than 1% packet loss
  - Multicast packets should be delivered within 200-500ms (for instance DAD requires answer within 1s)
- The solution space has been explored in the context of WPANs (802.15.4) and there is value in extending this to WLANs.

# Next Steps

- Identify problem areas in IETF protocols
- Identify reasonable workarounds
- Discuss problems and workarounds on the “multicast over wifi” IETF mailing list (mcast-wifi@ietf.org)
- Consider document for adoption by [mboned]