open80211s

What is it?

802.11s implementation in mac80211

o11s

802.11s

- ~12 drafts over 6 years
- incorporated in 802.11-2012
- ad-hoc
- dynamic
- redundant

what is a mesh STA?

- basically an AP, or STA which beacons
- identical roles
- provides data forwarding

o11s requirements

- mac80211 driver
- beaconing
- 4 addr frames
- FIF_ALLMULTI and FIF_OTHER_BSS

o11s compatible chips

- any ath9k
- some (at least rt5572) rt2x00 chips
- we like the TP-LINK WN721N (ath9k_htc)

o11s

drivers which could work

- ST-E cw1200
- TI wl{12,18}xx

advertises IFTYPE_MESH support
beacons and peers, but no 4addr yet

Other 802.11s implementations

cfg80211 (fullmac) cards
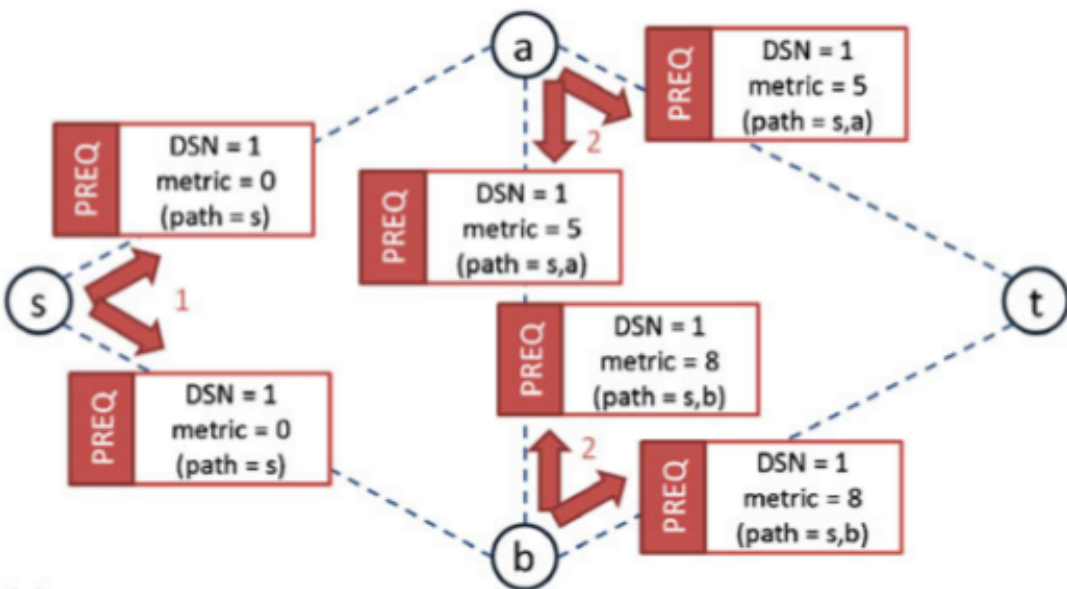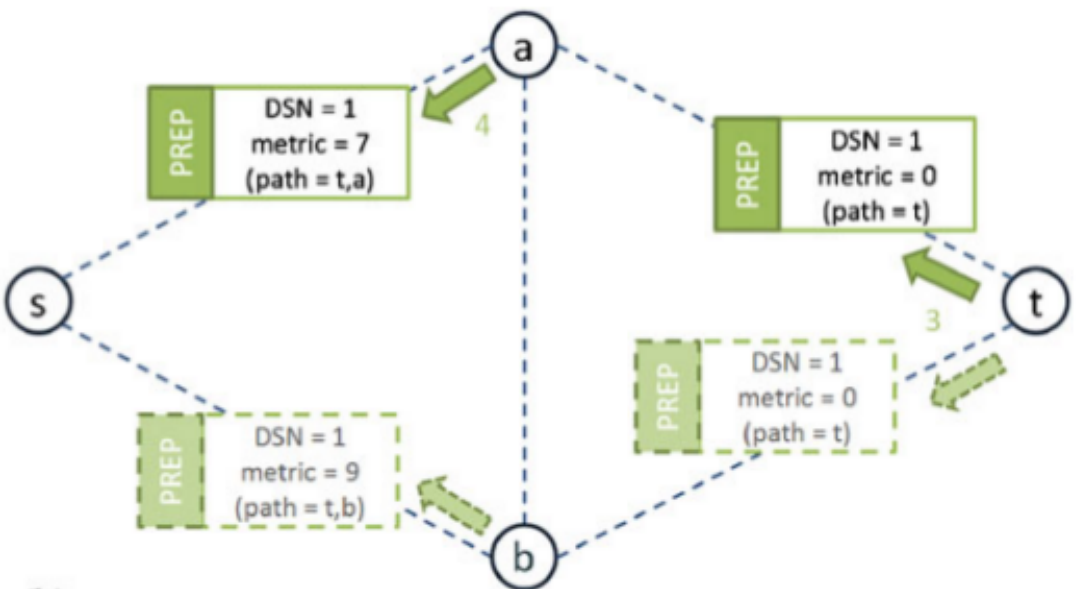
- libertas (mvl 8686)
- some realtek?

freebsd?

HWMP

(a)

(b)

PREQ DSN = 1 metric = 0 (path = s)

PREQ DSN = 1 metric = 5 (path = s,a)

PREQ DSN = 1 metric = 5 (path = s,a)

PREQ DSN = 1 metric = 0 (path = s)

PREQ DSN = 1 metric = 8 (path = s,b)

PREQ DSN = 1 metric = 8 (path = s,b)

PREP DSN = 1 metric = 7 (path = t,a)

PREP DSN = 1 metric = 0 (path = t)

PREP DSN = 1 metric = 9 (path = t,b)

PREP DSN = 1 metric = 0 (path = t)

$$c_a = \left[O + \frac{B_t}{r} \right] \frac{1}{1 - e_f}$$

root node

- proactive (periodic RANN)
- RX of RANN triggers PREQ/PREP
- usually bridged outside MBSS

what is left?

- power save (50% complete)
- MCCA and MBCA
- wpa_supplicant/network-manager/android integration
- better tools
- 11ac?