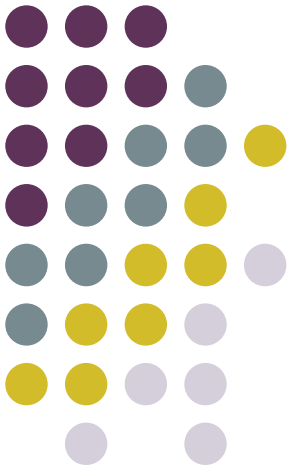
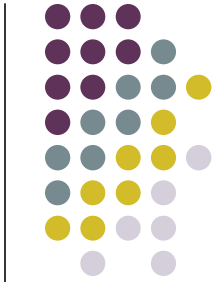
IAB Workshop TE & Multihoming Discussion





- External multi-homing
- Internal multi-homing and route de-aggregation for internal optimization
- MBGP amplification - strain on memory system
- Convergence

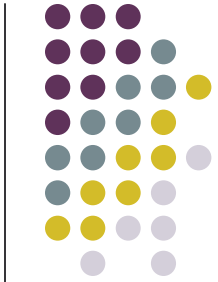
External Multihoming

- Multi-homing in all it's current flavors isn't going away
  - Increasing as AS assignments increase
  - Preferred method of traffic engineering for large content providers
- Increasing multihoming from customers
  - +10% 5yrs ago +30% today

    Regulatory pressures

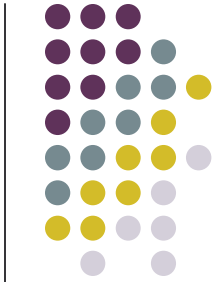
    Single-Source Contracts

Internal Multihoming and Route De-aggregation



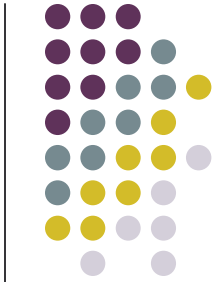
- Single largest contributor to internal AS bloat
  - Internal routing tables are >300K now
  - Preferred method of TE by majority of Tier 1 SPs
    - Depending on level of detail, can provide very granular control of forwarding decisions

MBGP Amplification



- Creating strain on current memory systems.
  - VRF proliferation also adding to internal route de-aggregation for control, further amplifying that problem
  - Today Sprint, MCI, etc.. veil large components of their edge (services) networks via overlays on the transit networks
    - However, if both were to live on same platform we would be uncomfortable with that systems stability

Convergence



- Convergence timing becoming critical
  - Are we approaching a world where the RIB and the FIB are more than two cycles out of phase lock?
    - Said a different way - Will topology be changing faster than future systems can install the updates given current trajectory path?
- As an aside, and to the point of Internal Bloat – Sprint has invested significant time and resources with our suppliers to fix and modify IGPs to address problem for now.