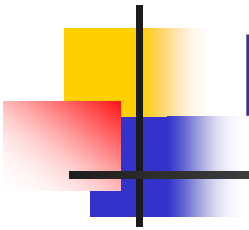
Route Aggregation Recommendations

Philip Smith, Rob Evans & Mike Hughes

RIPE 53, Amsterdam

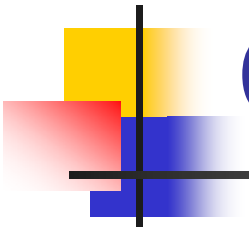
Route Aggregation Recommendations

- Draft document discussing:
  - History of aggregationg
  - Causes of deaggregation
  - Impacts on global routing system
  - Available Solutions
  - Recommendations for ISPs



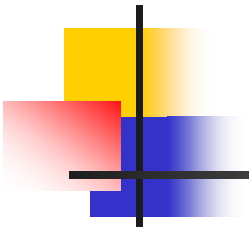
History:

- Classful to classless migration
  - Clean-up efforts in 192/8
- CIDR Report
- Registry system and PA address space



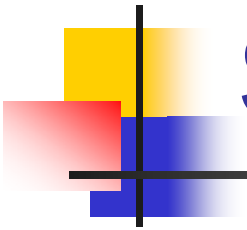
Claimed causes include:

- Routing System Security
- Reduction of DOS attacks & miscreant activities
- Commercial Reasons
- Leakage of iBGP outside of local AS
- Traffic Engineering for Multihoming
- Legacy Assignments



Impacts:

- Router memory
- Router processing power
- Routing System convergence
- Network Performance

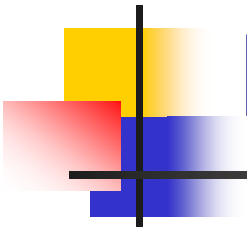


Solutions:

- CIDR Report
- Filtering
- “CIDR Police”
- BGP Features:
  - NO_EXPORT Community
  - NOPEER Community
  - AS_PATHLIMIT attribute
  - Provider Specific Communities

Recommendations:

- Announcement of initial allocation as a single entity
- Subsequent allocations aggregated if they are contiguous and bit-wise aligned
- Prudent subdivision of aggregates for Multihoming
- BGP enhancements already discussed
- (Oh, and all this applies to IPv6 too)



Next Steps:

- Community Feedback
- Adoption by WG
- Published as a RIPE document