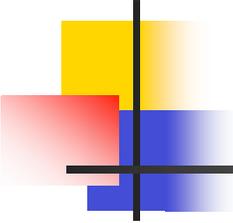


Route Aggregation Recommendations

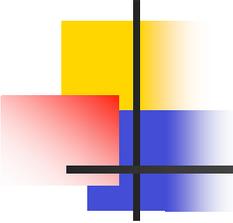
Philip Smith, Rob Evans & Mike Hughes

AfriNIC 5, Mauritius



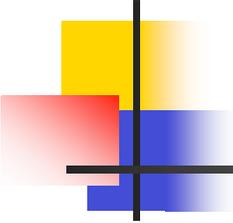
Route Aggregation Recommendations

- RIPE Routing Working Group work item
 - <ftp://ftp-eng.cisco.com/pfs/aggregation-draft5.txt>
- Draft document discussing:
 - History of aggregation
 - Causes of de-aggregation
 - Impacts on global routing system
 - Available Solutions
 - Recommendations for ISPs



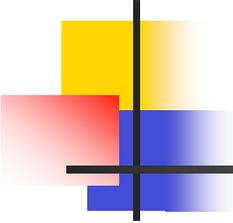
History:

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



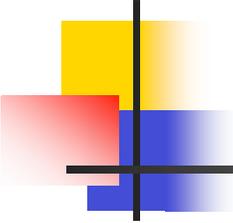
Claimed causes include:

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



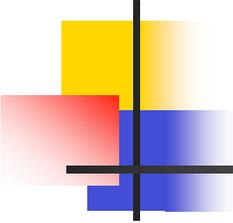
Impacts:

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



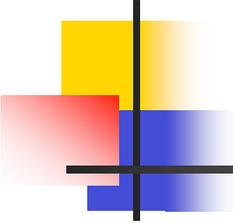
Solutions:

- 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)



Current Status

- Community Feedback sought
- RIPE Routing WG “final comments”
- To be published as a RIPE document