Motivation - External Drivers

• The number of policy enforcement partitions, e.g. VRFs, SDN Switch Tables, etc. is limited

• Operators want to provide more virtual ‘operators’, e.g. MVNO, which require more partitions for these tenants

• Operators and equipment providers want to support multi-tenancy

• Our current way of representing policy is not optimal for these conditions
Motivation - Current Policy Framework Limitations

• Requires engineering and provisioning to be optimal

• Best ‘on the fly optimization’ (dynamic optimization) is Filter-ID, e.g. integer values.

• Really applies to pre-provisioned or at the link level, e.g PDP <=> PEP

• Can’t really optimize dynamically and representation is not optimal
Policy Grouping

- Optimization of representing membership relations between and Authorized Client and the Policies that apply to them
  - Uses Set relations represented as bit sets
  - Adds 64 bits to be used for matching as a form of metadata, i.e. not related to the packet ~ similar to OpenFlow METADATA field
- Current methods
  - Added policy group identities (which must be engineered and provisioned)
  - Use a list of identities (which must be provisioned)
  - Send the whole policy structure
Result

- More compact representation for relationships between and Authorized User and Policy Entity
- Can support some tricky use cases
  - Default filters (‘any any’) with differing QoS Treatments can be in the same IPv6 Source-Destination RIB/FIB or SDN Switch (using membership test to filter instead)
  - Any common filter with different treatment actions can rely on the
Changes since 00

- Added Relationship model
- Added Mark Bales as co-author
Next Steps

• Feedback from group
  • Would like to see more
• Accept this as WG item at/prior to IETF 99?