YANG DATA MODEL FOR TOPOLOGY FILTER

draft-bestbar-teas-yang-topology-filter-02

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INTRODUCTION

- A topology filter is a data construct that can be applied on either a native topology or a customized topology to produce a filtered set of topological elements.

- A topology filter-set is a union of multiple topology filters that can be applied in tandem on a topology.

- This document defines a YANG data model for the management of topology filters/filter-sets on network elements and controllers.

MODEL STRUCTURE

- The top-level 'networks' container [RFC8435] is augmented with a set of topology filters and a set of topology filter-sets

```
module: ietf-topology-filter
    augment /nw:networks:
      +--rw topology-filters!
      |  +--rw topology-filter* [name]
      |      +--rw name             string
      |      +--rw topology-ref
      |      |  | ..........
      |      +--rw include-any
      |      |  | ..........
      |      +--rw include-all
      |      |  | ..........
      |      +--rw exclude
      |          ..........
      +--rw topology-filter-sets!
         +--rw topology-filter-set* [name]
            +--rw name               string
            +  ..........
```

TOPOLOGY FILTERS

- The 'topology-filters' container carries a list of topology filters.

- Each topology-filter entry specifies a set of include-any, include- all and exclude filtering rules that can be applied on either the native topology or a user specified topology.

TOPOLOGY REFERENCE

- The 'topology-reference' container indicates the topology on which the filtering rules need to be applied.

- The referenced topology could be a predefined TE topology and/or a specific IGP domain.

- The absence of the 'topology-reference' indicates that the filtering rules are to be applied on the native topology.

```
+--rw topology-ref
   +--rw igp-domain-identifier
   |   +--rw protocol-id?    igp-protocol
   |   +--rw instance-id?    uint32
   |   +--rw division-id?    uint32
   |   +--rw algo-id?        uint8
   |   +--rw mt-id?          uint16
   +--rw te-topology-identifier
       +--rw provider-id?    te-global-id
       +--rw client-id?      te-global-id
       +--rw topology-id?    te-topology-id
```

FILTERS

- The 'include-any', 'include-all' and 'exclude' containers carry a varied set of attributes that can be used as rules to filter the topology.

- If the topology-filter entry carries no filtering rules and only references a specific topology, then the set of filtered topological elements produced is the same as the one defined by the referenced topology.

```
+--rw include-any
|  +--rw link-affinity*   string
|  +--rw link-name*       string
|  +--rw node-prefix*     inet:ip-prefix
|  +--rw as*              inet:as-number
|  +--rw info-source* [source-id instance-id division-id]
|     +--rw source-id     tet:te-info-source
|     +--rw instance-id   uint32
|     +--rw division-id   uint32
+--rw include-all
|  +--rw link-affinity*   string
|  +--rw link-name*       string
|  +--rw node-prefix*     inet:ip-prefix
|  +--rw as*              inet:as-number
|  +--rw info-source* [source-id instance-id division-id]
|     +--rw source-id     tet:te-info-source
|     +--rw instance-id   uint32
|     +--rw division-id   uint32
+--rw exclude
   +--rw link-affinity*   string
   +--rw link-name*       string
   +--rw node-prefix*     inet:ip-prefix
   +--rw as*              inet:as-number
   +--rw info-source* [source-id instance-id division-id]
      +--rw source-id     tet:te-info-source
      +--rw instance-id   uint32
      +--rw division-id   uint32
```
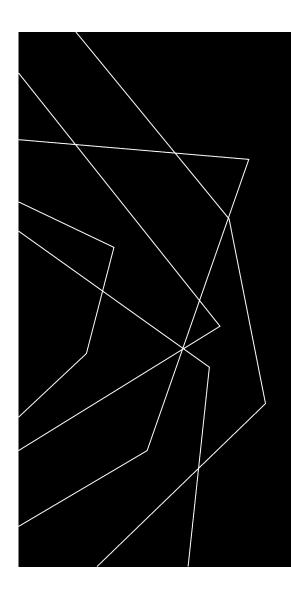
TOPOLOGY FILTER-SETS

- The 'topology-filter-sets' container carries a list of topology filter-sets.
- Each topology-filter-set entry constitutes a list of topology-filter references.
- This is used when there is a need to create a union of multiple topology filters.

```
+--rw topology-filter-sets!
   +--rw topology-filter-set* [name]
      +--rw name               string
      +--rw topology-filter*
            -> ../../../topology-filters/topology-filter/name
```

NEXT STEP

Request review and feedback

THANK YOU

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