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

```yang
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.
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.

```plaintext
---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
```
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.
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.

```yang
++-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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