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YANG Model for IP Traffic Flow Security

IETF 111 – “draft-ietf-ipsecme-yang-iptfs-00”

No Changes since IETF110

- Base spec draft-ipsecme-iptfs-09.txt progressing since WG last call
- Augmented YANG *draft-ietf-i2nsf-sdn-ipsec-flow-protection* now *RFC 9061*

Next Steps

- Asking for WG last call

Current Tree (ike version shown)

```
module: ietf-ipsecme-iptfs
augment /nsfike:ipsec-ike/nsfike:conn-entry/nsfike:spd
  /nsfike:spd-entry/nsfike:ipsec-policy-config
  /nsfike:processing-info/nsfike:ipsec-sa-cfg:
  +---rw traffic-flow-security
  | +---rw congestion-control?      boolean
  | +---rw packet-size
  | | +---rw use-path-mtu-discovery?  boolean
  | | +---rw outer-packet-size?      uint16
  | +---rw (tunnel-rate)?
  | | +---:(12-fixed-rate)
  | | | +---rw 12-fixed-rate?        uint64
  | | +---:(13-fixed-rate)
  | | | +---rw 13-fixed-rate?        uint64
  | +---rw dont-fragment?           boolean
  +---rw max-aggregation-time?      decimal64
augment /nsfike:ipsec-ike/nsfike:conn-entry/nsfike:child-sa-info:
  +---ro traffic-flow-security
  | +---ro congestion-control?      boolean
  | +---ro packet-size
  | | +---ro use-path-mtu-discovery?  boolean
  | | +---ro outer-packet-size?      uint16
  | +---ro (tunnel-rate)?
  | | +---:(12-fixed-rate)
  | | | +---ro 12-fixed-rate?        uint64
  | | +---:(13-fixed-rate)
  | | | +---ro 13-fixed-rate?        uint64
  +---ro dont-fragment?             boolean
```

```
augment /nsfike:ipsec-ike/nsfike:conn-
entry/nsfike:child-sa-info:
  +---ro ipsec-stats {ipsec-stats}?
  | +---ro tx-pkts?                uint64
  | +---ro tx-octets?              uint64
  | +---ro tx-drop-pkts?          uint64
  | +---ro rx-pkts?                uint64
  | +---ro rx-octets?              uint64
  | +---ro rx-drop-pkts?          uint64
  +---ro iptfs-inner-pkt-stats {iptfs-stats}?
  | +---ro tx-pkts?                uint64
  | +---ro tx-octets?              uint64
  | +---ro rx-pkts?                uint64
  | +---ro rx-octets?              uint64
  | +---ro rx-incomplete-pkts?    uint64
  +---ro iptfs-outer-pkt-stats {iptfs-stats}?
  | +---ro tx-all-pad-pkts?        uint64
  | +---ro tx-all-pad-octets?      uint64
  | +---ro tx-extra-pad-pkts?      uint64
  | +---ro tx-extra-pad-octets?    uint64
  | +---ro rx-all-pad-pkts?        uint64
  | +---ro rx-all-pad-octets?      uint64
  | +---ro rx-extra-pad-pkts?      uint64
  | +---ro rx-extra-pad-octets?    uint64
  | +---ro rx-errored-pkts?        uint64
  | +---ro rx-missed-pkts?         uint64
```

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Definitions of Managed Objects for IP Traffic Flow Security

IETF 111 – “draft-ietf-ipsecme-mib-iptfs-00”

Objective: Provide a read only SNMP MIB

- Some operators still require read-only SNMP support
- Mechanically derived from the YANG model
- Adopted by WG

Next Steps

- Asking for WG last call

```
leaf l2-fixed-rate {  
  type uint64;  
  description  
    "Target bandwidth/bit rate in bps for iptfs tunnel. This  
    fixed rate is the nominal timing for the fixed size packet.  
    If congestion control is enabled the rate may be adjusted  
    down (or up if unset).";  
  reference  
    "draft-ietf-ipsecme-iptfs section 4.1";  
}
```



```
l2FixedRate OBJECT-TYPE  
  SYNTAX Counter64  
  MAX-ACCESS read-only  
  STATUS current  
  DESCRIPTION  
    "TFS bit rate may be specified at layer 2 wire rate.  
    Target bandwidth/bit rate in bps for iptfs tunnel.  
    This rate is the nominal timing for the fixed size  
    packet. If congestion control is enabled the rate may  
    be adjusted down (or up if unset)."  
  ::= { iptfsConfigTableEntry 5 }
```

MIB Tree

```
----- iptfsMIB(1.3.6.1.3.500)
+----- iptfsMIBObjects(1)
+----- iptfsGroup(1)
+----- iptfsConfigTable(1)
+----- iptfsConfigTableEntry(1) [iptfsConfigSaIndex]
+----- iptfsConfigSaIndex(1) Integer32
+---r- congestionControl(2) TruthValue
+---r- usePathMtu(3) TruthValue
+---r- outerPacketSize(4) UnsignedShort
+---r- l2FixedRate(5) Counter64
+---r- l3FixedRate(6) Counter64
+---r- dontFragment(7) TruthValue
+---r- maxAggregationTime(8) NanoSeconds
+----- ipsecStatsGroup(2)
+----- ipsecStatsTable(1)
+----- ipsecStatsTableEntry(1) [ipsecSaIndex]
+----- ipsecSaIndex(1) Integer32
+---r- txPackets(2) Counter64
+---r- txOctets(3) Counter64
+---r- txDropPackets(4) Counter64
+---r- rxPackets(5) Counter64
+---r- rxOctets(6) Counter64
+---r- rxDropPackets(7) Counter64
```

```
+----- iptfsInnerStatsGroup(3)
+----- iptfsInnerStatsTable(1)
+----- iptfsInnerStatsTableEntry(1) [iptfsInnerSaIndex]
+----- iptfsInnerSaIndex(1) Integer32
+---r- txInnerPackets(2) Counter64
+---r- txInnerOctets(3) Counter64
+---r- rxInnerPackets(4) Counter64
+---r- rxInnerOctets(5) Counter64
+---r- rxIncompleteInnerPackets(6) Counter64
+----- iptfsOuterStatsGroup(4)
+----- iptfsOuterStatsTable(1)
+----- iptfsOuterStatsTableEntry(1) [iptfsSaIndex]
+----- iptfsSaIndex(1) Integer32
+---r- txExtraPadPackets(2) Counter64
+---r- txExtraPadOctets(3) Counter64
+---r- txAllPadPackets(4) Counter64
+---r- txAllPadOctets(5) Counter64
+---r- rxExtraPadPackets(6) Counter64
+---r- rxExtraPadOctets(7) Counter64
+---r- rxAllPadPackets(8) Counter64
+---r- rxAllPadOctets(9) Counter64
+---r- rxErroredPackets(10) Counter64
+---r- rxMissedPackets(11) Counter64
+----- iptfsMIBConformance(2)
+----- iptfsMIBConformances(1)
| +----- iptfsMIBCompliance(1)
+----- iptfsMIBGroups(2)
+----- iptfsMIBConfGroup(1)
+----- ipsecStatsConfGroup(2)
+----- iptfsInnerStatsConfGroup(3)
+----- iptfsOuterStatsConfGroup(4)
```

Comments / Questions?