

YANG Model for Transmission Control Protocol (TCP) Configuration

draft-scharf-tcpm-yang-tcp-06

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Recap: YANG discussions in TCPM

- **Several YANG discussions** in past TCPM meetings
- **RFC 4022 TCP-MIB** widely implemented
 - Routers via SNMP (e.g., Cisco)
 - Host operating systems in own formats (e.g., Linux, Windows)
 - Short-coming such as insufficient 32 bits counters (InSegs/OutSegs)
- **Specific needs** in other working groups
 - TCP-AO configuration in draft-ietf-idr-bgp-model
 - Protocol YANG models typically homed in WG owning the protocol
- **No clear consensus** in TCPM on what to do

„This will be painful and a waste of time“

vs.

„This is very useful, please also add X“ (e.g. congestion control)

- **Update in -06:** Minimal base model

Complete model in draft-scharf-tcpm-yang-tcp-06

```
module: ietf-tcp
  +--rw tcp!
    +--rw connections
      | +--rw connection*
      |   [local-address remote-address local-port remote-port]
      |   +--rw local-address      inet:ip-address
      |   +--rw remote-address     inet:ip-address
      |   +--rw local-port         inet:port-number
      |   +--rw remote-port        inet:port-number
      |   +--rw common
      |     +--rw keepalives!
      |       | +--rw idle-time      uint16
      |       | +--rw max-probes     uint16
      |       | +--rw probe-interval uint16
      |     +--rw (authentication)?
      |       +--:(ao)
      |         | +--rw enable-ao?    boolean
      |         | +--rw send-id?      uint8
      |         | +--rw rcv-id?      uint8
      |         | +--rw include-tcp-options? boolean
      |         | +--rw accept-ao-mismatch? boolean
      |         +--:(md5)
      |           +--rw enable-md5?   boolean
      +--rw server {server}?
      | +--rw local-address      inet:ip-address
      | +--rw local-port?        inet:port-number
      | +--rw keepalives!
      |   +--rw idle-time        uint16
      |   +--rw max-probes       uint16
      |   +--rw probe-interval   uint16
      +--rw client {client}?
      | +--rw remote-address     inet:host
      | +--rw remote-port?       inet:port-number
      | +--rw local-address?     inet:ip-address
      | +--rw local-port?        inet:port-number
      | +--rw keepalives!
      |   +--rw idle-time        uint16
      |   +--rw max-probes       uint16
      |   +--rw probe-interval   uint16
```

1

Connection list

TCP-AO (and TCP MD5)

(optional) server
and client config.

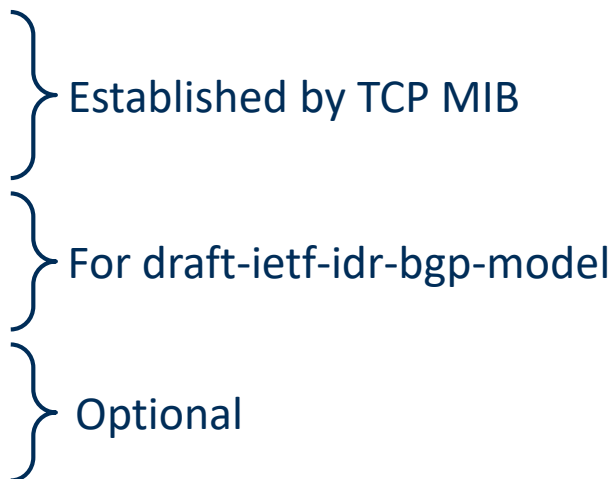
```
+--ro statistics {statistics}?
  +--ro active-opens?           yang:counter32
  +--ro passive-opens?         yang:counter32
  +--ro attempt-fails?         yang:counter32
  +--ro establish-resets?      yang:counter32
  +--ro currently-established? yang:gauge32
  +--ro in-segments?           yang:counter64
  +--ro out-segments?          yang:counter64
  +--ro retransmitted-segments? yang:counter32
  +--ro in-errors?             yang:counter32
  +--ro out-resets?            yang:counter32
  +--x reset
    +--w input
    | +--w reset-at?           yang:date-and-time
    +--ro output
      +--ro reset-finished-at? yang:date-and-time
```

Stats

Next steps for draft-scharf-tcpm-yang-tcp-06

■ Narrow scope in -06

1. TCP basic statistics (optional)
2. TCP connection list
3. TCP-AO and TCP MD5 with TCP-AO being strongly RECOMMENDED
4. Import of groupings from draft-ietf-netconf-tcp-client-server



■ Short resulting document

- Focused on already known, simple use cases
- Easy to review
- Extensions possible in other follow-up documents

■ WG adoption in TCPM?