# 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 configuation 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 recv-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
```

Connection list

TCP-AO (and TCP MD5)

(optional) server and client config.

1

```
+--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

2

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

- **Narrow scope in -06**
  1. TCP basic statistics (optional)
  2. TCP connection list

  } Established by TCP MIB

  3. TCP-AO and TCP MD5 with TCP-AO being strongly RECOMMENDED

  } For draft-ietf-idr-bgp-model

  4. Import of groupings from draft-ietf-netconf-tcp-client-server

  } Optional

- **Short resulting document**
  - Focused on already known, simple use cases
  - Easy to review
  - Extensions possible in other follow-up documents
- **WG adoption in TCPM?**