Smart filters for Push Updates – Problem Statement
draft-clemm-netmod-push-smart-filters-01

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Recap

• YANG-Push filters allow clients to select which nodes to subscribe to

• Many monitoring applications are based on observing values
  • “Is utilization above 90%?”; “Has critical range been reached?”

• However, filtering based on values currently not covered in YANG-Push
  • Do not stretch implementation complexity
  • To be truly useful, frequently also state may be required
    • Example TCAs: update once when breached, once when cleared
    • On-change update semantics: object created/deleted vs object in/out of range

• Smart filters addresses this gap
  • Transition from update notifications to simple events
  • Send update only if object’s value may require attention
  • Basis for many Service Assurance applications
  • Required for network automation: one source of events for Event-Conditions-Actions rules
Updates

• Draft has been lying “dormant” for some time
  • Logical extension and “next step” for YANG-Push
  • Need to get basic YANG-Push drafts out first
  • Given WGLCs are near conclusion, time to revive

• -01 defines the first set of filters:
  • Value filters: compare objects against a threshold value using an operator (ge, le, gt, lt, eq)
  • Push update includes object if value matches the comparison
  • Do not confuse with true threshold alerts (no state, no “clear”, no counter-threshold)
Smart + stateful filters

- Filter based on values
  - Match filters
  - Comparators

- Stateful filters
  - Threshold Crossings
  - Recent High Water Marks
  - Object in/out of filter
  - Other

- Aggregates over time
- Aggregates across objects
  - Full RMONification + Expression-MIBification

- Simple filter extensions
  - Updated on-change update semantics:
    - Semantics of object omission/inclusion
      - “on-change” → “on-change w/ filter”
    - This update

- Addl. stateful filter config: threshold, hysteresis threshold, time horizon

- Separate notifications – designated TCA, HWA
  - TBD

- Additional condition checks (out of scope)
  - Bryskin-netconf-automation-framework
Next steps

• Grow supported filter types
  • Add stateful filters
    • Threshold crossing / clearing with state
    • High-water / low-water marks

• Assess interest of the working group to define a solution for this problem
  • There was significant interest in the past
  • Given YANG-Push readiness, it may be time to take this up
  • WG adoption call once other drafts are in IESG?

Thank you!