Discrepancy detection between NMDA datastores

draft-clemm-netconf-nmda-diff-01

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Purpose

• NMDA involves different aspects and viewpoints of the same data being represented in different datastore
  • For example, data propagates from <intended> to <operational>
  • In practice, time lags may occur during propagation, or unexpected interferences take place (e.g. <operational> may “learn” something other than what was “intended”)

• Unexpected discrepancies that persist between object values in <operational> and <intended> may be problematic
  • Application may make different assumptions about actual state
  • Service-impacting conditions or resource misallocations may result
  • Those discrepancies may be hard to spot and troubleshoot

• This draft defines an RPC that allows to compare NMDA datastores
  • Report only discrepancies without needing to upload entire datastores
Module ietf-nmda-compare

module: ietf-nmda-compare

rpcs:
  +-----x compare
  +-----w input
    | +-----w source identityref
    | +-----w target identityref
    | +-----w (filter-spec)?
    |   | +--:(subtree-filter)
    |   |   | +-- w subtree-filter? <anydata>
    |   |   | +--:(xpath-filter)
    |   |   |   | +-- w xpath-filter? yang:xpath1.0 {nc:xpath}?
    |   | +-- w dampening? yang:timeticks {cmp-dampening}?
  +--ro output
  +--ro differences

Optional. Allows to specify for how long a discrepancy must persist for it to be reported. Output response is deferred accordingly.
Selected discussion items and next steps

• Next steps
  • Add examples
  • Add clarification re: reporting of origin discrepancy
    (e.g. object in <intended> but <operational> indicates something else)

• We believe this is a straightforward and useful addition to NMDA that will facilitate fault management and troubleshooting

• Request WG feedback

• Seeking WG adoption

Thank you!