

Robust NETCONF

<draft-cole-netconf-robust-config-01.txt>

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Objectives and Benefits

Objective is to more fully develop Validation and Verification capabilities tied to NETCONF operations.

- Validation - checking against a set of rules, e.g., all checks prior to moving configuration to <running>.
- Validation - measuring behavior (of <running>) against expectations.

Benefits include:

- Minimize faulty configuration,
- Minimize disconnects in networks with no 'out-of-band' access, e.g., MANETs or DTNs.
- Provide opportunity for device modelers to associate/recommend tests tied to specific configuration items.
- Develop a network-wide upgrade capability.

Changes from 00 to 01

- Cleaned up terminology to align with working group's.
- Streamlined main text, moving much to appendices.
- Made proposal explicit through proposed Capability, i.e., :verified-commit, and example test module, i.e., ping.yang.
- Added third coauthor.

:verified-commit Capability

Proposed a new NETCONF Capability, :verified-commit

- Pushes Verification testing to the server.
- Multi-stage operation, i.e., <start-verified-commit>, <complete-verified-commit> and <cancel-verified-commit>
- Multiple parameters, i.e., test indicator, timeout
- Multiple notifications, i.e., <verifiedCommitStatus> and <verificationTestComplete>

Example ping.yang

Defined an example, simple test module for discussion

- ping.yang module defined in appendix of draft
- pingControlEntries contain
 - specific ping parameters, e.g., source and target ipAdrs, packet size, number, time interval
 - success criteria, >M of N received defines success
 - pingControlIndex to indicate specific test as <start-verified-commit> parameter
- pingControlEntries are pre-loaded on server via NETCONF operations

Mailing List Discussion

Several comments on the mailing list regarding the 01 draft

- Comparisons to <commit> operation and confirmed <commit> operation.
- Make sure it will be available for writable-running based nodes as well, i.e. What does it mean to run <start-verified-commit> on <running> ?
- What does test-then-set mean for the <running> configuration? According to YANG the <running> is always valid. Which set of checks are run for test-then-set against a <candidate>?
- Examples too limiting, should expand to address tests not tied to connectivity. Related comments on use of ping.yang, a simple connectivity test.