robust NETCONF
<draft-cole-netconf-robust-config-02.txt>

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Objectives and benefits

Definitions:

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

Objectives:

- Minimize faulty configuration,
- Minimize disconnects in networks with no ’out-of-band’ access, e.g., MANETs or DTNs, and
- Develop inter-operable mechanisms for verification testing.
changes from 01 to 02

- Version 01 had originally proposed to couple verify with <commit> through a <verified-commit> operation.
- It was proposed on the mailing list (i.e., M. Bjorklund) to decouple the verify operation, which we have done in ver-02.
- ver-02 defines the new verify.yang module which is to be advertised according to the YANG specification [2].
- The module verify.yang defines:
  - Operations - <verify>, <cancel-verify>, and <complete-verify>,
  - Notifications - <verificationStatus> and <verificationComplete>, and
  - Requirements - on inter-operable test.yang modules.
verify.yang

- Pushes verification testing to the server.
- Multi-stage operation, i.e., `<verify>`, `<complete-verify>` and `<cancel-verify>`
- ‘Verification test suite’ comprised of multiple ‘test sets’ per `<verify>` operation.
- Multiple parameters, i.e., test-templates instanceIds, verbose reporting and test period.
- Multiple notifications, i.e., `<verificationStatus>` and `<verificationComplete>`.
A simple `<verify>` test example.
## <cancel-verify> operation

<table>
<thead>
<tr>
<th>Client</th>
<th>Server</th>
</tr>
</thead>
</table>
| o start network verification | <---------------------|-->
|     | <verify> w/ | o initiate network verification tests |
|     |     | |
|     |     | o send notification |
|     |     | |
|     |     | o send notification |
|     |     | |
|     |     | o terminate verification |
|     | <verificationStatus= | |
|     |     | 'failing'/>
|     |     | |
|     |     | <cancel-verify> | o immediately stops verification tests |
|     |     | |

- A <verify> test gone bad.
- Client issues a <cancel-verify> operation to immediately terminate tests.
example ping.yang

Defined an example, simple test module for discussion

- ping.yang module defined in appendix of draft
- verify.yang places requirements on the development of inter-operable test modules as identified in the draft, i.e.,
  - Test sets contained in a leaf-list indexed via instanceID.
  - Pass/fail determinations of Test Set results and test suite results.
  - Raw results contained in leaf-list.
- ping.yang represents an extremely simple example; extensible test.yang modules being developed.
Questions

• ?

Next Steps

• Flesh out more extensive test modules in YANG.
References
